"…THREADED THROUGH": THE MULTITEXTUALITY OF SITE-SPECIFIC MUSIC COMPOSITION

Samuel "Mark" Vaughn

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APPROVED:

Panayiotis Kokoras, Major Professor
David Stout, Committee Member
Joseph Klein, Committee Member and Chair of the Division of Composition Studies
Jaymee Haefner, Director of Graduate Studies in the College of Music
John Richmond, Dean of the College of Music
Victor Prybutok, Dean of the Toulouse Graduate School

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The two fields of acousmatic music and site-specific conceptual art take strikingly different approaches to the notions of space and place. In this document, I describe how these two areas of aesthetic research diverge and relate to each other, focusing on how their unique approaches can be implemented in the practice of site-specific music composition. The first part of this document surveys the distinctive features of each of these fields, describing the particular differences between them in their approach to space and place. The contradictions between the two approaches are then briefly analyzed in reference to Georgina Born’s understanding of music as fundamentally multitextual. In the second part of the document, I describe in detail how I implemented a site-specific approach when composing *“…threaded through,”* a 16-channel audio, 6 video, site-specific installation for the UNT College of Music Main Building. In this, I describe how both the space and place of the UNT College of Music Main Building influenced my musical choices, visual content, and approach to audio and visual spatialization. The final part of the document contains a detailed score for realizing *“…threaded through”* in the location of the UNT College of Music Main Building.

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PART I

CRITICAL ESSAY

Thesis

The purpose of this document is threefold. In the first chapter, I provide an overview of a contextual and theoretical basis for an approach to music composition that treats the site of the composition's performance as inseparable from the composition itself. This is generally referred to as site-specificity.[1] This compositional method, as I have practiced it, not only engages creatively with the unique spatial qualities of the site in which the piece is performed, it derives sonic, visual, and thematic materials from the site itself, seeking to include the particular cultural or communal significance of the site itself into the work. [2] These concerns align with two areas of research, the study of space as a music-compositional parameter, often carried out by composers in the field of contemporary academic music composition, frequently electronic music, and the practice of site-specificity in the visual and conceptual arts. These two fields often focus on different aesthetic concerns, the former often seeking to establish a framework for understanding the way sound can be moved creatively in space regardless of the environment and the latter seeking to engage with the reality of the spaces the artwork exists in. However, art is a holistic experience taking place within the range of human experience. Therefore, when implementing either a music-compositional approach or a conceptual artistic practice, the work produced will inevitably span multiple mediums and fields of signification. In this sense, a multitextual perspective, as described by scholars like Georgina Born, is a useful scholarly perspective to take when bridging the two fields of conceptual site-specific art and

[1] Mary M. Tinti, "Site-specific," *Grove Art Online*, 2010, Accessed September 30, 2020, https://doi.org/10.1093/gao/9781884446054.article.T2086064

[2] Miwon Kwon, "One Place After Another: Notes on Site-specificity," *October* 80: (1997).

spatial music composition.[3]

The second aim of this document is to clearly describe the way I implemented a site-specific approach in the composition of *"…threaded through"*, a thirty-minute audiovisual installation designed specifically for the UNT College of Music Main Building. In this section of the document, I describe how the ethos of site-specificity, as described in the first part of this document, informed my approach to the creation of the installation, including the choice and arrangement of sonic materials, the use of a particular visual vocabulary, the overarching thematic and conceptual concerns of the piece, and the engagement with the site throughout. In this, the theoretical, architectural, musical, institutional, and aesthetic domains that surround and inhabit the Music Building were crucial, as I used each of these modes of signification to form the composition through the lens of my own subjective position.

The third and final purpose of this document is to present the musical score for the realization of the work. In this work, the score consists of a detailed set of directions for realizing the work in its chosen site, the University of North Texas Music Building. This includes all technical, interpretive, and practical information for implementing the installation.

[3] Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the institutionalization of the musical avant-garde* (Berkeley: University of California Press, 1995).

Chapter 1

Space, Place, Music, Site, and Text

> *In experience, the meaning of space often merges with that of place. "Space" is more abstract than "place." What begins as undifferentiated space becomes place as we get to know it better and endow it with value.*
>
> Yi-Fu Tuan

In the mid-1970s, the geographer Yi-Fu Tuan wrote about and studied the role of individual experience in understanding the environments we inhabit, an approach to the study of geography that he called the "experiential perspective."[4] In the above quote, Tuan describes an experience many of us have had, where the time we spend and the experiences we have in a particular place deepens our understanding and valuation of that place, even though the place remains the same physical space it was when we first encountered it. In his work, one of Tuan's key insights was that multiple modes of meaning condition the way we interpret the environments we move through.[5] The primary concepts he uses to describe our experience of the world are the related notions of space and place.[6] Tuan describes the concept of space as being, among other things, signifying unfamiliarity and freedom, the unknown that is described by theories, but has not been lived in, while place is familiar and meaningful, a concept that signifies security, experience, and knowledge.[7] These two concepts perfectly encapsulate the idea of the site, as I approached it while composing "*…threaded through."* Additionally, they align with the two primary areas of academic research that

[4] Tuan, *Space and Place*, 7.

[5] Ibid.

[6] Ibid.

[7] Ibid.

this project engages with, spatial-acousmatic music, which, roughly, tends to focus on the idea of space and site-specific conceptual art, which concerns itself with place.

In this chapter, I provide an overview of the aesthetic and technical concerns that characterize the approach to space, spaces, and places in both of these fields, focusing on pertinent theories regarding these areas and discussing works by a variety of artists that engage with these ideas in the musical and conceptual/visual arts. At the conclusion, these two aesthetic approaches are synthesized through a discussion on the concept of multitextuality, as explained by Georgina Born in *Rationalizing Culture: the Institutionalization of the Avant-Garde.*[8]

1.1 An Overview of Music, Space, and Site

> *Please note that I spoke of "sound situations." This is important because the idea of the listener being in a (sound) situation inevitably invokes the notion of space – neither the sound nor the listener can be detached from space; sound and human beings, after all, cannot exist in a vacuum!*
>
> Jonty Harrison

When composers and scholars of the last one-hundred years considered the creation and experience of music, there was increased attention paid to the role of time as the elemental, structural substance of music. Igor Stravinsky, said in 1947 that "music is a *chronologic* art, as painting is a *spatial* art."[9] John Cage stated that the most important element of music was time, prizing duration as a superior element to pitch in that it contained both silence and sound, and the composer and theorist Jonathan Kramer, in a bibliography created to assist the study of time as a subdiscipline of

[8] Born, *Rationalizing Culture*.

[9] Igor Stravinsky, *Poetics of Music,* (Cambridge: Harvard University Press, 1947), 28.

musical study, said “music is pure temporality.”[10, 11] Perspectives such as these have elevated time itself to the level of a compositional parameter, in the way that pitch had been treated for centuries. Evidence of this abounds in the musical literature, but a strong illustration is found in Cage’s work, *Landscape Series No.* 4, where durational events and actions are specified, but the content of those durations is left entirely up to what happens to be on various radio stations at the time.[12] Few would argue that time is crucial to music, but in recent history a concurrent exploration and elevation of the parameter of space has occurred in music composition. An approach, summed up by Denis Smalley, when he said, “space can be more significant than time, or at least we can profit by starting with the idea that time can be placed at the service of space rather than the reverse. Time becomes space.”[13]

Space has been documented as a composed, musical parameter since at least the sixteenth century, but both the advent of new technology and new perspectives on musical aesthetics have enabled space to be afforded equality with the parameter of time in music.[14] Over the past fifty years, space has been routinely explored and discussed as a compositional parameter, by a variety of composers of all aesthetic orientations, including Alvin Lucier, Denis Smalley, Pierre Boulez, Maryanne Amacher, Jonty Harrison, Bill Fontana, and Christina Kubisch. Though the concept of space in

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[10] John Latartara, “Cage and Time: Temporality in Early and Late Works” *College Music Symposium* 47 (2007): 100.

[11] Jonathan D. Kramer, “Studies of Time and Music: A Bibliography,” *Music Theory Spectrum* 7 (Spring 1985): 72.

[12] John Cage, *Imaginary Landscape No. 4: or, March No. 2: for 12 radios*, (New York: Henmar Press, 1960).

[13] Denis Smalley, “Space-form and the acousmatic image,” *Organised Sound* 12, no. 1 (2007): 38.

[14] Richard Zvonar, “A History of Spatial Music: Historical Antecedents from Renaissance Antiphony to Strings in the Wings,” *eContact!*, (2005).

music is often discussed in relation to the advent of multi-channel electronic music, in the daily practice of music, music does not exist apart from space. Sound requires space to travel through; the action of musical performance requires space for the performers to move which informs the concert experience; musical instruments and concert halls acquire their identity by the way they physically shape sonic vibrations in space; notational systems, Digital Audio Workstations, and sonic analysis tools use spatial analogies to depict sound visually; and one of the most fundamental models we use to discuss pitch is the idea of "high" and "low" pitches. Each of these "spatial" features of music are not only practical methods for communicating about music, they are potential areas for creative exploration.

Despite the practical impossibility of separating the concept of space from the practice of all types of music, attention to composing in and with space is usually discussed in the context of a fairly recent musical genre, acousmatic music.[15] Acousmatic music which consists is music created in a studio, intended to exist only in recorded form and to be performed through speakers. Smalley defines it as "music in a purely recorded form which allows a free and imaginative play of sound images."[16] Acousmatic music is the direct descendent of the *musique concréte* tradition initiated in the mid-twentieth century and scholars such as Richard Zvonar and Jonty Harrison trace the emergence of space as a substantial compositional parameter to the advent of this aesthetic practice.[17]

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[15] Smalley, "Space-form."

[16] Denis Smalley, "Group de Recherches Musicales," *Oxford Music Online*, 2001, Accessed April 13, 2021. https://doi.org/10.1093/gmo/9781561592630.article.42131

[17] Zvonar, "A History of Spatial Music"; Harrison, "Imaginary Space"; Smalley, "Group de Recherches Musicales."

The ability to separate a sound from its original source provided by recording technology was both a crucial advance in music's relationship to space and was fundamental to establishing *musique concréte* as an artistic field.[18] In addition to allowing sound to exist separately from its original source, recording technology enabled the formulation of the theories that *musique concréte* is best known for, including sound-objects and reduced listening.[19] Recording technology also crucially enabled experiments with multi-channel audio-spatial compositions.[20, 21] It is possible that the theories and experiments enabled by recorded audio could be conceived of separately from the advent of this technology, however the musical and academic corpus produced in relation to the practice of musique concréte is virtually inseparable from the technology that produced it.[22]

Schaeffer's concept of reduced listening advocates for perceiving sound independently of its meaning and its cause, focusing only on the characteristics of a sound, in fact conceptualizing the sound as an object.[23] Michel Chion states that in order for this to be practiced, the precise sound must be listened to repeatedly, and for this to occur recordings must be used, "fix(ing the) sounds, which thereby acquire the

[18] Zvonar, "A History of Spatial Music."

[19] Michel Chion, *Audio-Vision*, (Paris: Columbia University Press, 1990).

[20] Ulf Holbrook, "Sound Objects and Spatial Morphologies," *Organised Sound* 24, no. 1 (2019).

[21] Zvonar, "A History of Spatial Music."

[22] Holbrook, "Sound Objects." See discussion of looping techniques as a method of analysis.

[23] Chion, *Audio-Vision*. Michel Chion discusses the problem of reduced listening as one that is complicated by several factors, namely the difficulty of speaking of music without reverting to physical data, total subjectivity, etc. However, his point neglects the fact that in speaking of sound we are inevitably crossing from one mode of experience and signification to another, that of non-linguistic sound to linguistic sound. Any understanding of the sound will inevitably be something other than what the sound is.

status of veritable objects."[24] The theories produced by *musique concréte* ,the aestheticization of recorded sound, and the control over the spatial arrangement of sound sources form a large part of the foundation for the contemporary practice of academic electronic music, particularly acousmatic music.[25]

Reduced listening expresses an ideal that is dependent on modern technology to achieve, which links the concept itself to a modernist worldview. Schaeffer related his theory of reduced listening to the philosophical discipline of phenomenology, with his concept of reduction being derived from the theories of Edmund Husserl.[26] The relationship between phenomenology and modernist aesthetics has been characterized as an "attempt to return to the invisible and unsayable foundations of human perception and expression, prior to objective points of view and scientific notions."[27] Schaeffer's theory of reduced listening expresses a modernist idealism in its belief that sound can be perceived entirely independently of its source, but it provides a unique mode of conceptualization, asking the listener to perceive perceptually-unified moments of sound as objects, a concept that implies consistent existence and solidity through time, rather than the ephemeral nature that sound is confined to in the absence of recording technology. This innovation along with Schaeffer's experiments in sound spatialization link his practice to a new way of conceiving of space in relationship to time in music.[28] As Ulf Holbrook says, "music is not just an art of time but also of space, and music is

[24] Chion, *Audio-Vision*, 30.

[25] Holbrook, "Sound Objects."

[26] Chion, *Audio-Vision*.

[27] Carole Bourne-Taylor and Ariane Mildenberg, "Phenomenology, Modernism, and Beyond," *PeterLang.com*, Accessed April 22, 2021. https://www.peterlang.com/view/title/10484?tab=subjects

[28] Holbrook, "Sound Objects."

never ‘just’ spatial but always spatio-temporal.”[29]

Though Schaeffer’s theories are still enormously influential in the field of academic electronic music, their limitations have been recognized and have been subject to revision by scholars such as Smalley and Jonty Harrison. Both Smalley and Harrison have sought to accommodate the ideal expressed by the concept of reduced listening within the broader, intermodal experience that listening involves.[30, 31] Harrison, in an article on the role of space in modern electroacoustic composition draws a distinction between quantitative and qualitative approaches to composition.[32] Harrison identifies quantitative composition as particularly concerned with structure, proportion, and parameterization, essentially creating vessels for content to enter.[33] This conception of music he attributes to modernist approaches, such as those proposed by Pierre Boulez.[34] Conversely, his description of qualitative composition foregrounds the uniqueness of individual sounds, aligning it with Schaeffer’s concept of the sound-object, and prioritizing the content aspect of the form vs. content dichotomy.[35, 36] Harrison says that acousmatic music initiated the possibility for truly qualitative music.[37] He critiques the staunch serialist modernism of Stockhausen and Boulez as

[29] Holbrook, “Sound Objects,” 20.

[30] Denis Smalley, “Spectromorphology: explaining sound-shapes,” *Organised Sound* 2, no. 2 (2001).

[31] Harrison, “Imaginary Space.”

[32] Ibid.

[33] Harrison, “Imaginary Space.”

[34] Ibid.

[35] Ibid.

[36] Holbrook, “Sound Objects.”

[37] Harrison, “Imaginary Space.”

"quantitative" composition taken to its logical extreme.[38] Harrison's alignment with the ideas of Schaeffer rejects the more universalist aspects of Schaeffer's theories embracing the specificity of qualitative music.[39] This argument undercuts the emphasis upon purity of aurality contained within the proposition of reduced listening by emphasizing the "organic" in contrast to the "architectonic," the actual in contrast to the theoretical, or the lived in contrast to the idealized.[40]

Harrison links these arguments to how he conceives of the role of space in acousmatic music. Harrison discusses space in music particularly in the performance practice of diffusion, a practice that prioritizes the uniqueness of musical performance in contrast to the possibly machine-like listening experience of acousmatic music.[41] In this way, Harrison continues an aesthetic distinction that was drawn at the beginning of electronic music between *elektronische musik* and *musique concréte*, affiliating both himself and Pierre Schaeffer with a musical train of thought that prioritizes the qualitative, the experiential, the performed, and unique in contrast to the articulation of structural, abstract, parametric, sound organizations.[42] This thought process emphasizes the uniqueness of spatial construction as a part of unique sonic experience.[43] The ideas that Harrison proposes offer a theory for how space in music can be shaped to offer more than a theoretical experience, a way in which a music

[38] Harrison, "Imaginary Space."

[39] Ibid.

[40] Ibid.

[41] Ibid.

[42] Ibid.

[43] Ibid.

composition can function more than just abstract space, but possibly a unique place in itself.

Another prominent scholar on spatialized sound in acousmatic music, Denis Smalley, takes Schaeffer's concept of sound objects and extends it beyond the confines of reduced listening by introducing the idea of source-bonding, the idea that as listeners we naturally assign sources to sound even in the absence of knowing what the source is.[44] This approach to the issues inherent in acousmatic music remains aligned with Schaeffer's theory as a starting point, but combats the universalizing tendencies inherent in this theory by allowing for the subjectivity of the listener.[45] Smalley expands upon Schaeffer's original proposition by proposing music that invites the engagement of the listener's imagination, in both the aural and extra-aural senses.[46] Smalley's ideas invoke the "sound-image," more of a spatial construct than a temporal, while engaging subjectivity simultaneously.[47] Smalley says, "there is no objective method of achieving a visual spectromorphological representation, and the analyst hopefully becomes only too aware of subjective decision-making and alternative 'readings'. This is as it should be."[48] In embracing the subjectivity of the listening response, Smalley's work aligns with Harrison's concept of qualitative music and the "organic" character of the performance and listening experience that Harrison describes.[49]

As it concerns the physical spatialization of audio, Smalley has named

[44] Smalley, "Spectromorphology."

[45] Ibid.

[46] Smalley, "Space-form."

[47] Smalley, "Group de Recherches Musicales."

[48] Smalley, "Spectromorphology," 108.

[49] Harrison, "Imaginary Space."

acousmatic music as, “the only sonic medium that concentrates on space and spatial experience as aesthetically central.”[50] In “Space-form and the acousmatic image,” Smalley describes a method of analysis and composition that foregrounds space as the primary element of musical structure.[51] This article, Smalley’s ultimate aim in his text is to create a vocabulary for understanding the complexity of space in music as it extends through the perceptual, the physical, the performative, and the psychological.[52] In his article, Smalley offers twenty-nine distinct types of space, each providing a refinement of the general concept of space in relation to the experience of listening.[53] These terms, such as mediatic space, performed space, perspectival space, and circumspectral space branch into aural-spatial perceptual experiences as diverse as those conditioned by mass media, those that are related to the act of “intentional sound-making,” the general relationships between various sounds from the listener’s individual listening position, and the division of a perceptually-unified sound into perceptually-distinct areas of the frequency spectrum.[54]

Smalley takes care to remain entirely focused on acousmatic music in this paper, with each of his categories pertaining as much as possible to the sense of hearing rather than more typical notions of space, such as visual or tactile experience.[55] However, he is fully aware of the sensory terrain that the perception of space entails. He pays special attention to the experience of transmodality in acousmatic music, asking

[50] Smalley, “Space-form,” 35.

[51] Ibid., 35-58.

[52] Ibid.

[53] Ibid.

[54] Ibid.

[55] Ibid.

the question, “how could I know water flows from its sound alone?”[56] His ultimate point is that this music has the potential for the listener to engage with space in a holistic sense, where listeners can imagine spaces for themselves, create subjective spatial conceptions, and may imagine the space that the sound may inhabit.[57]

The aesthetic viewpoints offered by Smalley and Harrison characterize much of the contemporary practice of acousmatic music and are important theories in the continued development of multi-channel music composition. However, this approach tends to concern itself with an idea of space that exists as an ideal separate from the actual spaces in which the music is performed. Acousmatic music usually adopts an approach to sound in space that is distilled as much as possible in its purest form. Spaces designed for this music are generally acoustically dry or subject to artificially-imposed rather than naturally occurring acoustics.[58] In typical multi-channel configurations for electroacoustic concerts the focus is usually on exercising total control over the space.[59] Though the use of space as a compositional element has become a common area of exploration in the field of electroacoustic music, it tends to engage in a type of aesthetic idealism, which prioritizes the “ideal listener” and transcendent experience.[60] Smalley says, “in spectromorphological thinking we must try to ignore the electroacoustic and computer technology used in the music’s making.”[61]

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[56] Smalley, “Space-form,” 35-58.

[57] Ibid.

[58] “Listening Room,” *CCRMA*, ccrma.stanford.edu. https://ccrma.stanford.edu/room-guides/listening-room

[59] Ibid.

[60] Smalley, “Space-form.” See Smalley’s discussion of the role of the listener in constructing “proprioceptive” space in relation to acousmatic music

[61] Smalley, “Spectromorphology,” 108.

This can be a useful perspective to adopt when thinking about sound and music, but this perspective ultimately ignores the cultural significance that the medium of electroacoustic music brings with it. In discussing the concept of source-bonding, Smalley says “the bondings involve all types of sounding matter and sound-making, whether in nature or in culture,” but defines acousmatic music as “music for loudspeakers alone,” in effect ignoring the cultural connotations of loudspeakers.[62]

Roland Barthes’ theory of denotation and connotation explains the way that this perspective on acousmatic music can be both true and can disregard an important element of experience. Barthes names a denoted meaning as a simple signifier and signified.[63] In the case of acousmatic music, this could mean a sound-object or spectromorphology within a given piece which functions as the signifier and the imagined space this brings to the mind of the listener as the signified. But Barthes notes that there is a higher-level process of signification that occurs called connotation.[64] In this process, the sign created by the signifier and signified becomes a new signifier, which connects to a new signified in the mind of the interpreter, leading to a more complex level of signification.[65] This means that the concept of imagined space in connection with the sound produced by the speaker may signify in the mind of the listener the more complex concept of acousmatic music as a whole. Furthermore, the listener will likely be experiencing multiple other signs, both visual and tactile such as the number of speakers, the feel of the chair, the largeness of the room, and so forth.

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[62] Smalley, “Spectromorphology,” 109-110.

[63] Roland Barthes, *Image-Music-Text*, (London: Fontana Press, 1977).

[64] Ibid.

[65] Ibid.

This in conjunction with the experience of the music played at an acousmatic concert, leads to a very high level of connotation, one which gives an overall impression of the culture and broad aesthetics of acousmatic music. Given the importance of this dimension in aesthetic experience, attention to the perception and experience of the medium of multi-channel acousmatic, speakers, mixers, cables, etc., seems as important to consider as the internal events of a given acousmatic work.

Just as Pierre Schaeffer's theory of reduced listening offers a perspective on sound that disregards the way in which we naturally attribute sounds to sources, contemporary multi-channel, acousmatic music often disregards the meaning of the spaces and places in which the music is performed, in favor of an idealized and somewhat universalizing perspective on how space in music should function and be experienced. For aesthetic research on the significance of places, particularly institutions, reference to theories on site-specific conceptual art can be illuminating to fill in the gaps left by spatial-compositional theories.

1.2 Relationship of Music and Space to Site-Specific Theories in the Visual and Conceptual Arts

> *The modern gallery/museum space, for instance, with its stark white walls, artificial lighting (no windows), controlled climate, and pristine architectonics, was perceived not solely in terms of basic dimensions and proportion but as an institutional disguise, a normative exhibition convention serving an ideological function. The seemingly benign architectural features of a gallery/museum, in other words, were deemed to be coded mechanisms that actively disassociate the space of art from the outer world, furthering the institution's idealist imperative of rendering itself and its hierarchization of values "objective," "disinterested," and "true."*
>
> Miwon Kwon

In her article, "One Place After Another: Notes on Site-Specificity," the art historian Miwon Kwon describes three types of site-specificity, each of which provides a

valuable perspective for approaching the concept of the site as it pertains to aesthetic experience, whether musical or otherwise. The first type of site-specificity Kwon describes is what she calls *the phenomenological approach*. Kwon traces the roots of this type to the aesthetics of Minimalism in the visual arts, a practice whose use of industrial materials, non-traditional methods of display, and starkness, emphasized clear awareness of the artwork's origin, construction, and environment in the viewers experience.[66] As Frank Stella, one of the originators of Minimalist aesthetics said of art, "what you see is what you see," a quote that places the spectator's present awareness as central to experience.[67]

In discussing the origins of site-specificity, Kwon says, "the radical restructuring of the subject from an old Cartesian model to a phenomenological one of lived bodily experience; and the self-conscious desire to resist the forces of the capitalist market economy, which circulates art works as transportable and exchangeable commodity goods…came together in art's new attachment to the actuality of the site."[68, 69] The phenomenological model, of "lived bodily experience" as described by Kwon, bears an interesting connection to Schaeffer's theories of reduced listening and Smalley's subject-oriented adaptation of these theories.[70] In both cases, the experience of the

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[66] Christopher Want, "Minimalism," *Grove Art Online*, 2015, Accessed April 16, 2021. https://doi.org/10.1093/gao/9781884446054.article.T058397

[67] Karen Michel, "With Artist Frank Stella, What You See Is What You See," *NPR.org*, December 26, 2015, Accessed April 22, 2021. https://www.npr.org/2015/12/26/460862565/with-artist-frank-stella-what-you-see-is-what-you-see

[68] Kwon, "One Place," 86.

[69] "Robert Smithson, *Spiral Jetty*," *DIA Art*. https://www.diaart.org/visit/visit-our-locations-sites/robert-smithson-spiral-jetty For an example of phenomenological site-specific art, see Robert Smithson's *Spiral Jetty.*

[70] Kwon, "One Place," 86.

audience member in the present moment is foregrounded, asking the viewer to distill their experience into one that engages directly with the materials presented, apart from art-historical knowledge and associative mechanisms. There is a significant difference between these theories, in that acousmatic music is not concerned with "the actuality of the site," whereas phenomenological site-specificity asks the viewer to incorporate the experience of the site into their experience of the art, viewing the two as inseparable. However, in both theories, there is something of an absolutist belief in pure perception. The reality of how we perceive is idealized rather than acknowledged as inextricably connected to the rest of our experience, as well as influenced strongly by the institutions which present that art.

The role of institutions and external economic forces in the shaping of art is acknowledged by Kwon when she addresses the commodification of art in her description of phenomenological site-specificity. Kwon notes that the motivation to resist market forces among artists presaged the second type of site-specificity she names, *the social/institutional type*.[71] This type not only engages with the space where the work exists, but it engages with the social significance of those spaces, frequently employing social critique of the institutions in which the work is displayed, by making the hidden functions and power of the institutions tangible through the artwork. This approach to art-making was pioneered by artists who were involved in the concurrent aesthetic movement of institutional critique, such as Marcel Broodthaers, Hans Haacke, and Mierle Laderman Ukeles, who serves as artist in residence for New York City's

[71] Kwon, "One Place," 85-110.

Department of Sanitation.[72] These artists made the art world itself the subject of their work, such as in Laderman Ukeles' piece *Washing/Tracks/Maintenance: Outside*, in which Ukeles' documents herself washing the stairs of the Wadsworth Atheneum, drawing a parallel between the act of maintenance that is usually assigned to women and people of color in social and art institutions and the role of the white artist.[73]

As it relates to the idea of space in music, the acknowledgement of the institutional identities of the spaces where the music is performed is not common, though some contemporary works engage with the same concerns of institutional critique, such as work by Johannes Kreidler.[74] There are likely several reasons for this, one being that academic/contemporary art music is still intimately connected with the practice of classical European music and the cultural identity that this type of music promotes. Additionally, the geometric approach to multi-channel music composition, forms a type of ensemble that is somewhat standardized, allowing music to be composed in one place and performed in another. It is certainly true that the most efficient model for creating musical works, either electronic or score-based is to standardize the works for the widest distribution possible. For instance, writing simple music for common ensembles that is stylistically related to aesthetic categories that are already well-established within the market situates a composer to achieve greater economic success. Though multi-channel electronic music is not typically thought of as

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[72] Jillian Steinhauer, "How Mierle Laderman Ukeles Turned Maintenance Work into Art," *Hyperallergic.com*, February 10, 2017, Accessed December 15, 2020. https://hyperallergic.com/355255/how-mierle-laderman-ukeles-turned-maintenance-work-into-art/

[73] Ibid.

[74] Johannes Kreidler, "Kreidler in 4 minutes," *YouTube.com*, January 17, 2016, Accessed April 16, 2021. https://www.youtube.com/watch?v=Y5_Shkj-wnc

profitable, it does exist within an institutional and economic system, based in universities, which provide alternative forms of capital, such as cultural capital.[75] This system, as with all systems, prioritizes a certain approach to the exploration of space in music in order to provide that capital in return. When considering the topic of site-specificity in multi-channel audio compositions, there is no cultural or monetary incentive to create music that questions the institutions that provide the possibility of that music's existence, particularly when it is already fairly unprofitable. In this sense, the dominant mode of working with multi-channel audio is incentivized, due to the standardization of the medium enacted by universities, which have their own ideological interests. In describing the aesthetics of institutional critique, Kwon describes the movement as "highlighting the idealist hermeticism of the space of presentation itself."[76] in this case Kwon is discussing the museum, but this description can be as easily applied to concert halls of all types, particularly those designed for classical music and multi-channel electronic music theaters, such as the listening room at the Center for Computer Research in Music and Acoustics at Stanford University, which has a centrally-placed chair in a septagon, surrounded by speakers below, at ear level, and above, creating a type of spherical/closed-geometric system of sound.[77]

The third type of site-specificity that Kwon describes is related to the social/institutional type, but treats the larger culture in which the art is produced as a site in itself. Kwon refers to this type as the *discursive type*.[78] The discursive site is in

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[75] Pierre Bourdieu, *A Social Critique of the Judgement of Taste*, (Cambridge, Massachusetts: Harvard University Press, 1984).

[76] Kwon, "One Place," 88.

[77] "Listening Room," *CCRMA.*

[78] Kwon, "One Place."

conversation not only with the physical site, but with the historical, economic, and intellectual conditions that produce and influence both the site and the artwork. In this sense, the type of sites that this type of site-specificity is concerned with is the social space and place of the viewer in relation to the art world. (Listening Room 2009)**, "**In these ways, the "site' of art evolves away from its coincidence with the literal space of art…it is rather the *techniques* and *effects* of the art institution as they circumscribe the definition, production, presentation, and dissemination of art that become the sites of critical intervention."[79]

This type of site-specificity is even more intertwined with the artistic movement of institutional critique. Though the work itself may still take place in a physical site, from which it is inextricable, the site being engaged is as much the position of the artist as it is the physical place where the work takes place. A superb example of this type of site-specificity is found in the performance artist Andrea Fraser's piece *Official Welcome (Hamburger Kunstverein)*.[80] This work was literally the speech that Fraser gave to the audience to inaugurate her mid-career retrospective at the Kunstverein.[81] In this work, Fraser directly quotes multiple highly successful artists, such as Damien Hirst and Kara Walker, giving introductory speeches of their own, displaying their words and behavior in a distilled, out-of-context presentation, which highlights the absurd, vain, ridiculous, and sincere coexisting in the space of a highly artificial environment, that of the career retrospective and welcoming speech. As a crucial part of this work, Fraser gradually strips naked at one point in the performance and then re-dresses. This act powerfully

[79]Kwon, "One Place," 91.

[80] "Andrea Fraser," *Ubu Web*, Accessed September 30, 2020. https://www.ubu.com/film/fraser.html

[81] Ibid.

juxtaposes the absolute vulnerability of being naked in front of a crowd of people with the verbal adornments and affectations of the art world and its most celebrated artists.

In regards to site-specificity, this performance is unrepeatable and completely site-specific in that it coincides with a singular moment and location in Fraser's career, which cannot be repeated. It achieves symbolic power through the prestigious space in which it occurs, as well as the unique cultural and social position that Fraser is afforded in this moment. Fraser uses this to invoke other artists with similar privilege who have either been honest about the institutional realities that brought them there or have propagated the myth that hides the ideological mechanisms behind the entire art world.

Kwon says, that the relationship between discursive site-specificity and its "site" rests on "the recognition of its unfixed *impermanence*, to be experienced as an unrepeatable and fleeting situation."[82] As it concerns a musical approach to space and discursive site-specificity's approach to space, it may seem difficult to find connections between these approaches, but the "unrepeatable and fleeting situation" described by Kwon, is a situation that is actually much more common to music than it is to visual/conceptual art. Traditional visual artists usually work in mediums that resist the viewer's perception of change in time, whereas music ultimately takes place as a temporal event. Even in the most tightly controlled type of acousmatic music, each occurrence of music is in fact an unrepeatable event, as the exact acoustic reflections, temperature of the air, position of the listener's head, type of speaker used, and listener frame of mind will not ever be exactly repeated. In a sense, the technology of recorded sound as well as the technology of the musical score can be viewed as an attempt to

[82] Kwon, "One Place," 91.

free music from its existence in time and to allow it to be understood in repeatable, infinitely examinable detail, like the spatial exactitude of visual art. In essence, all that music has to do to return to site-specificity is embraced in its natural state. All musical performances are site-specific in the sense that to attend the performance is an unrepeatable event that is inseparable from both a specific place and a specific time.

Beyond the element of unrepeatability however, the element of discourse is crucial to this type of site-specificity. Given that music is a non-linguistic artform, it may seem difficult to attribute the quality of discursivity to music, but this could also be said about the visual and conceptual arts, a realm where discourse is frequently attributed. To gain a better sense of how music can be discursive, the use of semiotic concepts can be instructive.

1.3 Multitextuality and Intertextuality

In *Rationalizing Culture: IRCAM and the Institutionalization of the Avant-Garde*, the musicologist Georgina Born invokes the twin concepts of multitextuality and intertextuality in approaching the experience of music.[83] Born describes multitextuality as “the analysis of meaning as operating through many simultaneous, juxtaposed, and interrelating symbolic forms or mediations,” going on to name some of these mediations as they pertain to music as, “aural, visual-textual, technological, (and) social.”[84] Born describes intertextuality as “the idea that meaning is created by signs referencing other cultural realms through connotation.”[85] As it regards semiotics, I have described

[83] Born, *Rationalizing Culture.*

[84] Ibid., 16-17.

[85] Ibid.

Barthes' concept of connotation earlier in this document, though Born describes this construct more technically as the way in which artists through their work create meaning in relation to other work in that medium.[86, 87]

Intertextuality in the sense that Born uses it, implies knowledge of and experience with a variety of texts within a medium as a prerequisite for understanding the meaning of that art, whereas multitextuality simply describes the way that all music, as well as all other art, and possibly all experience takes place. In a holistic sense, practically every experience human beings have can be described in multitextual terms. Though no person has knowledge or experience in every discipline or field, every person has knowledge and experience in multiple areas, whether it is multi-channel acousmatic music, site-specific conceptual art, Brutalist architecture, navigating street signs, intuitive knowledge of color theory, folk physics, the English language, the cultural application of humor in the North Texas area, organ music, etc. Each of these areas, along with practically any area that can be defined, can be thought of as a text, one which has been written by many authors up until this point and one which is continually being written. The experience of walking through a building or a college campus, is a multitextual experience for each participant, in that they are confronted with a multitude of signs, which relate to various texts which they will have varying levels of experience with, be it the classification of birds, the traffic rules for walking and driving on a campus, the masonry techniques used to form the walls of buildings, and so on. The primary reason for adopting a multitextual perspective in relation to art is that

[86] Born, *Rationalizing Culture.*

[87] Barthes, *Image-Music-Text*.

all texts that comprise the experience of art for the audience member are valid. This is in contrast to an intertextual approach, in which specific expertise in a particular textual field is something of a prerequisite.

As it concerns the relationship between contemporary, academic multi-channel electronic music and the theories of site-specific conceptual art of the twentieth and twenty-first centuries, both texts can be overlaid and exist in the same creative and compositional space, without necessarily having to make them cohere into a single overarching theoretical model. In this respect, the knowledge and experience that an artist has with a variety of texts can be brought to bear widely upon their practice and the intended result of the work. The audience experience can be embraced as entirely unique and unrepeatable in the mind of each participant, while simultaneously acknowledging the interconnections and intertextual expertise that many viewers will experience when this approach is adopted.

1.4 Concluding Remarks

In this chapter, I have not intended to discover one-to-one correlations between theories of site-specific conceptual art and theories relating to music and space or to particularly dismiss or promote one approach as inherently more valuable than the other. Rather, I have intended to consider the ways in which the artistic insights and practices of one field can inform another, particularly as it involves attention to the institutional realities of that field's existence. The theories of Pierre Schaeffer, Jonty Harrison, and Denis Smalley are beautifully articulated and valuable approaches to the concept of space in music, but these theories tend to disregard the concept of place, as it has been explored in other artistic fields. In site-specific conceptual art, the idea of

place is not simply one of unique physical location, but a concept that extends to one's position in social, cultural, and institutional spaces as well as the listeners position in physical space. As music is an art, one which inevitably engages multiple senses and modes of signification, the acknowledgement and incorporation of this concept in the discourse that conditions spatial music composition is one that should be accounted for in the continued development of this particular field of expertise.

In foregrounding the question of space in music primarily in relation to multi-channel acousmatic music and artists engaged in institutional critique, I have not mentioned work by a variety of composers and sound-artists who engage with space in a way that highlights the uniqueness of individual spaces. One of the most important composers to mention in this regard is Alvin Lucier. Lucier's seminal work *I Am Sitting in a Room*, provides a beautiful implementation of the concept of site-specificity. In this piece, the recording of his voice or whoever happens to perform it is re-recorded over and over in a room, with the resonance of the particular room where it is performed gradually being amplified while the non-resonant frequencies are gradually attenuated.

Though this work is not designed for a specific room, it bears a very interesting approach to site-specificity in that the ultimate trajectory and sound of the piece's performance is inseparable from the room in which it takes place. In this sense, every performance of this piece is a site-specific piece for a different room. Additionally, the words that constitute the primary content of this piece engage with social and discursive elements in a similar way to the social/institutional and discursive types of site-specificity described by Kwon. Specifically, Lucier says in the piece, "I regard this activity not so much as a demonstration of a physical fact, but more as a way to smooth

out any irregularities my speech might have."[88] This line, which ends the piece, fully establishes the subjectivity of the person speaking these words in relation to the world around them. The description of physical/scientific facts being used as a way of smoothing out irregularities, evokes the concept of scientific phenomena being used to achieve perfection and the ideal sound; but without the irregularities of the performer's speech, there is no sound at all, nor is there any character, individuality, or humanity to the work. The performer who speaks this text is in discourse with an ideology of perfection, one which characterizes only certain types of sounds as acceptable.

[88] "Alvin Lucier," *Ubu Web*, Accessed April 16, 2021. https://www.ubu.com/sound/lucier.html

Chapter 2

Application of Site-Specificity in *"…threaded through"*

At the University of North Texas College of Music, the Merrill Ellis Intermedia Theater, is the most analogous space to the "white cube" spaces of art museums.[89] The room aspires to geometric perfection in its position of speakers, projectors, and screens, allowing a very high degree of sonic and visual immersion. In this sense, the theater, is the perfect environment for creating imaginary places, a term adapted from Jonty Harrison's notion of "imaginary spaces."[90] Though the MEIT is unique in many respects and a site-specific piece could certainly be written for it, the sense of place it has is experienced only by a relatively small cohort in the College of Music, namely the students enrolled in classes offered in the Division of Composition Studies. Though the fondness for this place by these students is profound, the building which contains the MEIT is frequented by a far wider array of students, staff, and faculty.

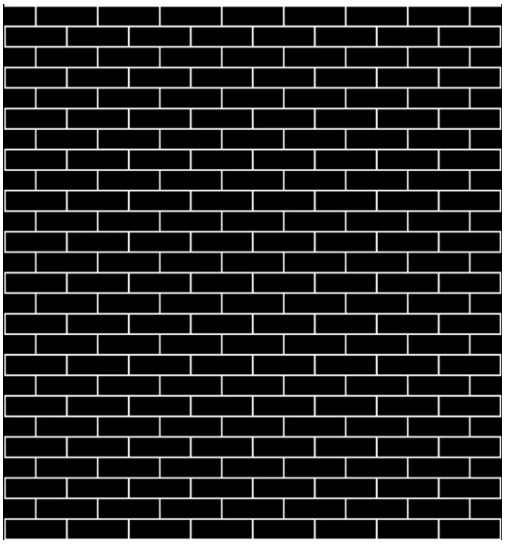

Figure 1: Illustration of stretcher bond bricklaying

[89] "White Cube," *Tate Modern*, Accessed April 16, 2021. https://www.tate.org.uk/art/art-terms/w/white-cube

[90] Harrison, "Imaginary Space."

This building, the College of Music Main Building, similarly to the MEIT, is also constructed in a way that could be interpreted as implying neutrality. The dominant visual pattern encountered when walking through or around, specifically the southern half of the building, is brickwork, specifically the *stretcher bond* type of bricklaying, the most common form of bricklaying pattern.[91] The starkness of the bricks and the blocky forms that characterize this portion of the building, are features common to Brutalist architecture, common in the 1960s and 1970s.[92] Of course, neither the MEIT nor the College of Music building are Platonic ideals, they are both unique spaces and places. Though the College of Music Main Building partakes of aesthetics that could be interpreted as suggesting abstraction and absolutes, when one explores the angles of the hallways, the imperfection of the bricks, the acoustic reflections of the building, and the sounds native in and around the location, the uniqueness of the place becomes clear. This is an experience that every student, faculty, and staff member has in one form or another. In this sense, the building is an incredibly rich site for exploring acoustic, social, symbolic, and institutional texts. The modes of signification present in the act of walking through the building ranges through geometric abstraction, the acoustic design of a brick building for music, the cultural knowledge that accompanies every piece of music played in its rooms, the social and economic position of each staff member, faculty member, and student, the sense of institutional motivations, and so on. These features, along with my own personal connection to the place, my privileged

[91] "Brick Technical Manual," *Brickworks Building Products*, (Australia: 2017). As it regards the division of the north and south halves of the College of Music Main Building into what are, informally, the jazz and classical sides respectively, a great deal more research and discussion could be conducted. Unfortunately, this is outside the scope of this document.

[92] Reyner Banham, Lin Barton, and Benjamin Flowers, "Brutalism," *Grove Art Online*, 2003, Accessed April 16, 2021. https://doi.org/10.1093/gao/9781884446054.article.T011886

access to the resources of the building, and a multitude of other ideas made the idea of composing specifically for this site a deeply exciting prospect.

2.1 General Overview of the Structure and Form of *"…threaded through"*

In a general sense, *"…threaded through"* can be divided into two main elements– the visual and the auditory content, which consists of sixteen channels of audio and six unique videos. The audio material was chosen both to interact with the natural acoustics and sounds of the building and its environs, as well as to make the social and institutional forces that condition its significance tangible. The videos are designed to be mapped to specific sections of the Music Building's walls. The material created in the videos is designed to augment and interact with the brick patterns of the building, as well as to reference the environs of the area more directly, specifically as it relates to the natural environment of North Texas and the use of the building as a place for classically-derived music.

On a physical level, each channel of audio and each individual video requires its own piece of equipment to be placed in a specific location. The locations chosen for this equipment were not arbitrary. They influenced the content that was chosen for the given speaker or projector creating a connection between individual locations in the building and compositional material. An important feature of this piece is that it is intentionally designed so that the whole cannot be experienced all at once. In this sense, it is useful to assess some elements of the structure of the piece from a spatial rather than time-based perspective. This is an important point in regards to site-specific music composition because the spatial arrangement of the media is, in this type of composition, equally as important as the temporal considerations.

2.2 Spatial Structure

Figure 2 depicts in 3D space the shape of the path that the audience will need to travel to experience the entire installation.[93] Essentially, the spatial structure of the work is a loop, which is implied by the audio or visual nodes that are placed along the path and by the architecture of the Music Building. Audience members may enter or exit the loop freely, but in order to get a sense of every sound or image producing object they will need to walk this loop in one way or another.

The spatial loop of *"…threaded through"* is determined by the architectural design of the College of Music Main Building, specifically the way in which the first and second floors of the southwest wing of the building are connected by two stairwells. The loop can be entered at any point, exited at any point, and walked in any direction, but for the purposes of composition, I imagined the loop beginning at the top of the southwest stairwell**.** At this location I placed speaker 1, and following the path shown in figure 1 northward, numbered each speaker consecutively.

By using the architectural features of the Music Building to determine the arrangement of the speakers, a unique geometrical structure is created that allows for possibilities of sound spatialization particular to this shape. This allows the approach to sound spatialization in this work to be approached from the shape of a specific architectural design, rather than from the approach of abstract symmetry. A symmetrical approach is necessary when focusing on a listener that is centered in a ring of speakers, but if the listener is moving around a large space, the phasing caused by

[93] "UNT Music Building Map," *University of North Texas*, music.unt.edu, Accessed April 16, 2021. https://music.unt.edu/sites/default/files/UNT-Music-Building-Map.pdf

asymmetry becomes somewhat uncontrollable.

Apart from the possibilities for spatialization that using a specific architectural site presents, there are opportunities for this data to be adapted to other musical parameters. As a numerical structure comprised of x, y, and z points this geometric structure can be mapped onto musical parameters, such as rhythm, pitch, dynamic, etc. as easily as it can be used to determine an architectural structure. Though I did not explore this at length in *"…threaded through"* this feature provides an additional possibility for exploring relationships between space, place, and music.

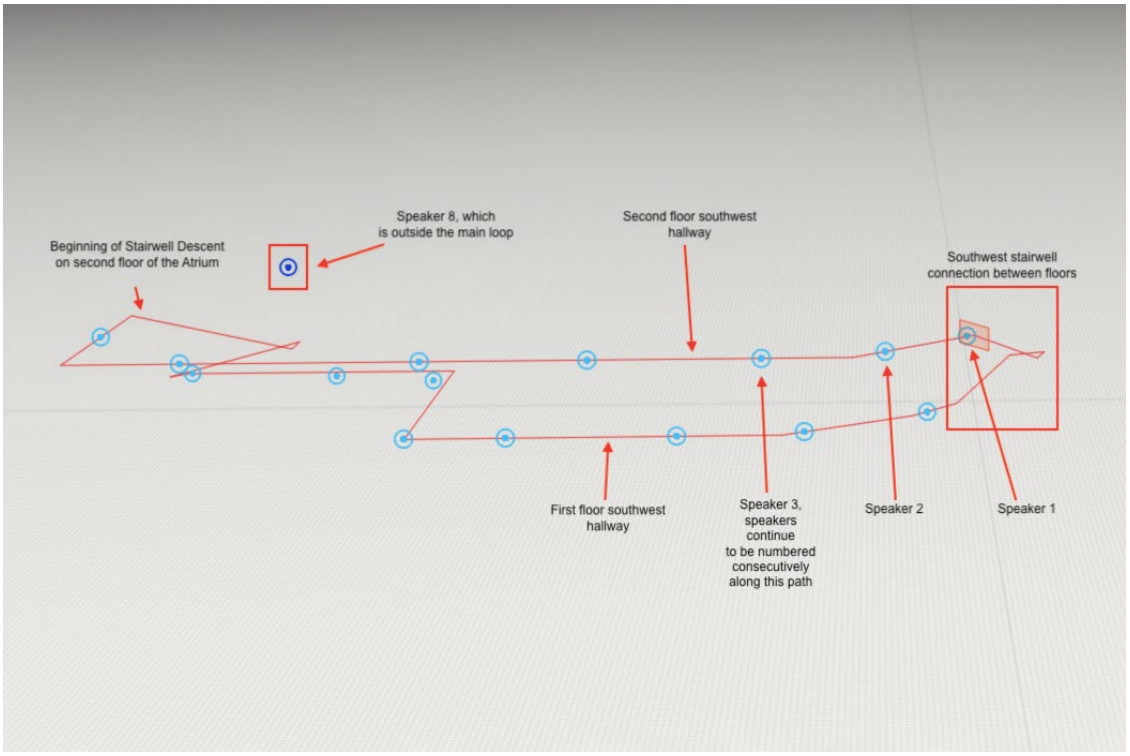

Figure 2: 3d depiction of geometric structure/loop[94]

In the experience of the audience, the loop is implied by the arrangement of speakers and projection sites. If an audience member enters the music building at the

[94] "Iannix.org," *Iannix*, Accessed April 16, 20201. https://www.iannix.org/en/ Model designed in IanniX 0.9.20

main entrance of the music building, numbered E.02 and E.01 on the first two pages of the score, two possible directions for traveling the loop are immediately apparent. To the audience member's right, they will hear sound from the speakers arranged through the southwest hallway and will be able to see three of the speakers from their vantage point. Additionally, they will see two speakers directly in front of them, one facing into the Music Commons/Atrium area and one facing toward them from the Music Commons stairwell. They will also see light from the Upper Atrium projector, though they will not see the image displayed by that projector. If they look over the ledge into the atrium, they will see one video being projected onto the wall between the atrium stairwell and the north/south ramp on the atrium floor and they may also see speaker 7, facing south. These concerns were attended to when considering the placement of sonic and visual nodes along the geometric structure.

2.3 Basic Technical Structure

In order to form a loop from a technical perspective, *"…threaded through"* is divided into three modules, each of which are run from a dedicated computer. These modules are shown in the score accompanying this essay. Each of these modules connect to two projectors and either five or six speakers, depending on the given module. These modules each cover a certain section of the loop as-a-whole. For instance, Module 1, shown in Figure 3, sends video to Projectors 1 and 6 and sends audio to Speakers 1-5, as well as Speaker 16. This module covers the area from the first floor of the southwest stairwell up to the second-floor southwest hallway. Module 2 sends projection to Projector 2 and Projector 3 and sends audio to Speakers 6-10, covering the area extending from the southwest hallway, west around the atrium on the

second-floor, down the stairwell into the atrium and south to the north-south hallway.

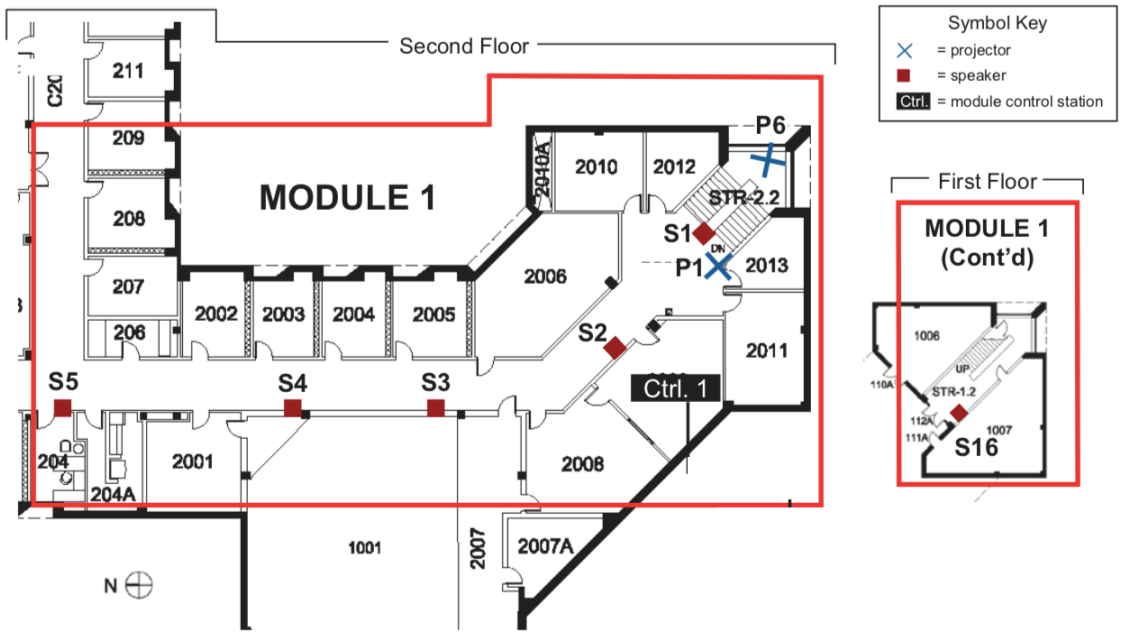

Figure 3: Overview of Module 1, detail from score

Module 3 sends video to Projectors 5 and 6, audio to Speakers 11-15 and covers the east-west hallway on the first floor into the first-floor, north-south hallway, out through the breezeway, which connects with the first-floor area of the southwest stairwell. Though these modules were chosen for primarily technical reasons, the concept of the loop being divided into modules lent itself to the construction of the musical form. Though each piece of equipment is treated as a unique voice in the piece, the modules function as ways of collecting those voices into groups, somewhat like the antiphonal choirs of Adrian Willaert and Giovanni Gabrieli.[95]

2.4 Temporal Structure/Musical Form

As it concerns the musical form of *"…threaded through,"* the temporal structure

[95] Zvonar, "A History of Spatial Music."

is, similarly to the spatial structure, also a loop. Each audio file and video file last exactly thirty minutes before repeating. Just as the audience is able to freely enter and exit the spatial loop, each major section of the audio and visual material is clearly divided while also meant to progress fluidly into the next, allowing the audience to potentially perceive each section as either a beginning or an end.

Though the audience can perceive each section as a beginning or end, in contrast to the "beginning" of the spatial loop of the work, I chose a more definitive starting point for the temporal loop in my own understanding of the piece. I also suspect this is communicated in the experience of an audience member who stays for the entire thirty minutes. Just as the building influenced the shape of the piece, actual temporal loops influenced the piece's temporal structure. In the score, the piece is directed to start on the half-hour, which is when the sound of the University of North Texas' carillon, rings both in the piece and in the actual site of performance.[96] In the piece, but only on the first Wednesday of the month at the actual site, the sound of the carillon is followed by the sound of the City of Denton's tornado siren test. These events form the beginning of the loop. These events are external mediating structures that are specific to the site itself, which when heard along with the piece or at times when the piece is not playing link to the ultimate perception the audience member will have of the piece when they hear these sounds. In this way, the site generates the content of the piece, producing a more inseparable connection than non-site-specific sounds would carry.

Apart from the signifying sound of the clock tower carillon, which marks the

[96] R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*, (Rochester: Destiny Books, 1977).

nominal beginning of the work, the piece is divided into four main sections, each of which focus on particular themes. These materials overlap throughout the work in various ways, but each section is meant to focus on different features unique to the act of inhabiting the music building, the University of North Texas campus, and North Texas in general. Each of these sonic foci have symbolic and associative meaning in addition to their purely acoustic features.

Table 1: Primary sections of *"...threaded through"*

Sections	Section 1	Section 2	Section 3	Section 4
Timings	0:00-8:20	8:20-16:00	16:00-22:50	22:50-30:00
Audio Material	Carillon and Siren	Sine Waves	Music/Vocals	Nature
Visual Material	Columns of colored brick w/ threads	Patterns of colored brick w/ threads	Overlaid notation imagery, with colored brick	Video loops of North Texas environments and animals
Subject Matter	Institutional Time, Society, Order, Government	Acoustics, Abstraction, Science, Order, Simplicity, Grids, Pulses	People, Place, Position, Knowledge, Belonging, Humanity	Nature, Lack of Control, Indifference

2.5 Precise Formal Plan

Though the entire structure of *"…threaded through"* can be reduced to a single large loop in both the temporal and spatial domains, I utilized a more precise method of organizing the technical, sonic, and visual materials presented within the work. In order to run all of the speakers and projectors in rough synchrony, three computers were required with fairly precise cable lengths for both the audio and video equipment. As mentioned earlier, this technical requirement lent itself to conceiving of the piece in three related modules (see page 2 of score). Though these modules were determined primarily for technical reasons, they suggested a certain approach to musical form as

well. Given that each of these modules pertain to a specific area of the building, it was logical to characterize these areas with different sonic and visual material. Generally, each module has the same four sections, the clock tower and siren, the sine waves, the musical quotations, and the natural material. However, each audio channel contains its own individual material as well, including a unique sequence of sine waves, individual vocal loops, particular animal sounds, etc. Additionally, the quotes that occur throughout the piece are chosen to emphasize a certain type of subject matter in contrast to other areas of the building.

When considering possible approaches to form in a multi-channel audio scenario, it can be useful to conceive of musical form as somewhat analogous to musical texture. For instance, you can play sixteen pieces of music simultaneously with sixteen speakers, which can be thought of as sixteen-voice polyphony. However, each piece of music has its own internal form, making this what I would call a polyphonic form. This can be a useful model when approaching spatialization as a method of conceiving of the possibilities.

For instance, when approaching spatialization, *monophonic spatial form* would be a mono piece distributed through as many speakers/voices as desired. The form is spatialized, but it maintains the same sequence of events. In contrast to this, *polyphonic spatial form* would be a spatialized work with independent material in each speaker/voice. *Homophonic spatial form* would be the use of groups of speakers as supporting material while other speakers/voices carry foreground material. In *"…threaded through"* the best description of my approach is heterophonic spatial form, which is an arrangement in which groups of voices have the same fundamental formal

organization while diverging in terms of surface material, ornamentation, etc.

A specific way this occurred in *"…threaded through*," was that I chose the atrium area to function as something of a public square, where official information and propaganda are disseminated. In keeping with this idea, quotes taken from the UNT University Brand Strategy and Communications website and UNT College of Music Website form the majority of spoken material in this area.[97,] (University of North Texas 2021) The voices that speak in this area are also predominantly male, which reflects the patriarchal power distribution that characterize most U.S. institutions, including the UNT College of Music.

In contrast to the Music Commons area, the first module, which consists of the second floor of the southwest wing, utilizes spoken material that reflects a more scholarly and private disposition, though still predominantly male. This is my personal association with the area, due to the area serving mostly as offices for male composition faculty. For this area, I chose to use quotes from geographer Yi-Fu Tuan and composer/sound artist Francisco Lopez. These quotes reflect an interest in the arts and humanities, which I feel characterizes the composition area of the UNT building, but also remains predominantly male and intertwined with the power structures of the institution more explicitly referenced in the atrium area. To reflect this, quotes from the UNT Branding Website and frequent announcements of the UNT College of Music "corporate and foundation benefactors" are included in this more private area.

The third module used material that was mostly specific to art history and

[97] "University Brand Strategy and Communications," *University of North Texas*, 2021, Accessed April 16, 2021. https://brandstrategy.unt.edu/

criticism in the visual arts. The two articles quoted at length were “One Place After Another: Notes on Site-Specificity” by Miwon Kwon and “Grids” by Rosalind Krauss. Each of these articles provide direct information about the art historical connections of the work that the audience is currently experiencing. The voices used in this module are primarily women’s voices to reflect the gender of the two authors, as well as to reflect the greater number of women in the fine arts than in music composition.[98] The positioning of female voices on the lower floor and male voices on the upper floor is a way of making hierarchical gender structures tangible. Additionally, the inclusion of visual art-historical material on the lower floor could reflect the low status that symbolic or conceptual approaches carry in the world of “serious music,” a world that tends to prioritize belief in purely internal musical value, evidenced by the notion of “absolute music.”[99]

2.6 General Overview of Audio and Visual Content

As an analysis of form becomes more specific, the discussion becomes one of content. Though the distinction between form and content can be problematic, the designation between them can be useful as a rough method of categorization.[100] Roughly, the media that comprise *“…threaded through”* are divided into the audio content and the visual content, each of which consists of groups of material with different types of relationship to the site of the Music Building itself. The content is

[98] “Get the Facts,” *National Museum of Women in the Arts*, 2021, Accessed April 16, 2021. https://nmwa.org/support/advocacy/get-facts/

[99] Roger Scruton, “Absolute Music,” *Oxford Music Online*, 2001, Accessed September 30, 2020. https://doi.org/10.1093/gmo/9781561592630.article.00069 (Scruton, Absolute music 2001)

[100] Duncan Robertson, “The Dichotomy of Form and Content,” *College English* 28, no. 4 (1967): 273-279.

primarily organized in accordance with the four sections of the piece. In order to examine the types of content that occur in the piece in detail, it is useful to focus on the audio content and the visual content separately, though the actual experience of the piece is meant to be one of experiencing multiple areas of perception and signification.

Table 2: General Groupings of Audio and Visual Content in *"…threaded through"*

Audio Content	Visual Content
Sine Waves of Bespoke Frequencies w/ Convolution Reverb	Colored Bricks and Columns
Spoken Text	Threads
Musical Quotations and Sampled Material	Musical Notation Allusions
Nature Sounds/Field Recordings	Nature Imagery

2.7 Pulsed Sine Waves: Abstraction, Reflections, Acoustics, and Resonance

The frequencies of the sine waves in "…*threaded through"* were chosen through a particular process, which was meant to engage with the unique acoustic reflections of the building. To choose the sine waves, I placed a speaker in specific locations in the building and played a sine wave with a duration of about 100 milliseconds with a very short attack and release to hear the reflections of the chosen frequencies against the brick walls. I walked around to listen to the reflections of the sound against the brick walls. Depending on the frequency chosen and the position of the listener the sine waves produce different rhythmic variants. A change in the listeners' position can make a difference between hearing doublings, triplings, negated attacks, extended releases, etc. When the speakers are positioned against one wall of the main hallways of the Music Building, such as the second-floor southwest hallway, facing directly into the opposing wall, the frequencies that produce the most interesting reflections tend to be the frequencies whose wavelength are close to the length of the hallway's width or are a

harmonic of that frequency. In the case of the southwest wall, the east-west hallway on the first floor, and the north-south hallway on the first floor, the width of the hallways is nine feet. The frequency with a wavelength of nine feet is 125 Hz.[101] This frequency as well as frequencies near it produces particularly interesting reflections when played at a fairly loud level.

Apart from speakers that were positioned facing directly into the walls of the hallways, I repeated this process in other locations, including positioning speakers directed into non-opposing surfaces and open areas. Depending upon the placement of each speaker, certain types of resonance and sonic material suggested itself. Higher frequencies were used in the speakers that had more reflection surfaces or space, as those frequencies are easily absorbed by materials.[102] For speaker one, which faced into the open shaft of the stairwell, reverberant bright material and spoken material was used. This was also true of Speaker 5, which was directed down the east-west hallway on the second floor. In contrast, the speakers that faced directly into walls were chosen to feature lower frequencies, which reflect and resonate better within confined spaces.

Following my selection process of interesting frequencies in different locations, I compiled a spreadsheet of all frequencies that I found to be interesting, arranging them from low to high frequencies and assigning certain notes to certain speakers/spaces. This effectively created a pitch scale comprised of 62 frequencies, with the range between 4000 and 6000 Hz also being filled in with samples of ascending sine wave

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[101] "Sound Wave Length Chart," *JDB Sound Acoustics*, jdbsound.com, 2013, Accessed April 16, 2016. https://www.jdbsound.com/art/frequency%20wave%20length%20chart%202013.pdf

[102] "Sound absorption," *Brittanica*, brittanica.com, Accessed April 16, 2021. https://www.britannica.com/science/sound-physics/Refraction

glissandi. The spreadsheet showing the grouping of frequencies according to speaker is reproduced in Appendix A.

In addition to the acoustic simplicity and possibilities for isolation of individual frequencies that sine waves afford, there are also specific associative meanings that they have. All sounds can theoretically be reduced to a collection of sine waves of different amplitudes, frequencies, and phases, but sine waves themselves virtually never occur in a singular form in natural acoustic settings. A sine wave is an abstraction produced by machine technology that allows humans to analyze, organize, and understand sounds as discrete components. In this sense, sine waves can represent ideas of purity, simplicity, scientific analysis, objectivity, and concrete abstraction. These associations among those familiar with the phenomenon of a sine wave allows them to be used to represent abstraction and purity as a concept in itself. Though they are often presented as neutral and objective sonic objects, their sonic associations are with the austere world of scientific analysis and order. These associations, as noted by Georgina Born, are cultivated within the field of computer music as a method of procuring institutional and musical legitimacy.[103]

Though the sine waves are presented starkly in bursts in the second section. I used the sine waves to condition other sounds in a more subtle way throughout the work. In each speaker, I created an impulse response of the aggregate of sine waves assigned to each speaker and ran the other audio files through this, in order to create a unique resonance for each speaker.

[103] Born, *Rationalizing Culture.*

2.8 Field Recordings and Nature Sounds

Another important type of sound used throughout was field recordings. The first section of the piece from 0:00 to 8:20 is structured around a field recording I made at noon on October 7, 2020 of the UNT Clock Tower and the City of Denton monthly test of the tornado siren warning. This recording was used as a template for the first eight minutes and twenty seconds of the piece. These sounds as mentioned earlier are particularly site-specific in that they are unique sounds to the place of the University of North Texas. These sounds qualify as types of environmental sounds classified by the composer R. Murray Schafer, specifically two types: *signals* and *soundmarks*.[104] These sounds are signals in that they are "acoustic warning devices" as defined by Schafer.[105] These sounds communicate something, both time and potential danger making them ways in which the community who hears them is informed. However, I would claim that these sounds could also qualify as soundmarks. Schafer defines soundmarks, as the sonic equivalent of landmarks, saying soundmarks are "a community sound which is unique or possesses special qualities which make it specially regarded or noticed by the people in that community."[106] Though I cannot say with certainty that these sounds are specially regarded by all members of the broader UNT community, I do think that they could be, if appropriate attention and interest is paid to them and if they are engaged with for the unique sounds they are.

In the fourth section of the work (24:05-30:00) the primary audio material consists of bird, insect, and amphibian song. The sources for these recordings are field

[104] Schafer, *The Soundscape*, 9-10.

[105] Ibid.

[106] Ibid.

recordings from the BBC Sound Library, the Texas Parks and Wildlife website, as well as field recordings I made myself.[107, 108] The recordings almost entirely include animals that are found in the North Texas region where the Music Building resides. For a full list of the animals used, see Appendix B. These sounds enter at 22:50 to draw a parallel between the sounds made by humans and the sounds made by animals. At 24:05 all human-made sounds cease, apart from machine-sounds found in the recordings (cars, planes, etc.) and these sounds are presented starkly for the remainder of the work.

Symbolically, these sounds are presented within the Music Building as sounds that might exist in that actual location if the building itself were not there. It is possible that in the future these sounds will exist in that location or that those sounds have existed there in the past. For instance, it is possible that a red-winged blackbird has emitted its call in the exact location that speaker 1 is located or that it will in the future.

As it concerned the selection of these sounds for particular speakers and spaces, bird sounds predominate in reverberant, high spaces, such as Speakers 1, 6-8, and the outdoor speaker, Speaker 15. Additionally, cicada sounds were selected to emit from these speakers, since they are generally heard coming from treetops. An egret colony was chosen for the first floor, as the image of a marsh was projected through the bricks at this point in the piece. I was not particularly rigorous about the way I assigned animal sounds to the various speakers, but the general ideas and impressions I acquired

[107] "BBC Sound Effects," *BBC*, Accessed April 16, 2021. https://sound-effects.bbcrewind.co.uk/

[108] "Herps of Texas: Frogs and Toads of Texas," *Texas Parks & Wildlife*, Accessed April 16, 2021. https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/texas_nature_trackers/amphibian_watch/amphibian_species/

toward the spaces influenced my selection of sound for the different spaces in a variety of ways.

2.9 Musical Quotation Material

The third section of the piece, 16:00 to 22:50, focuses specifically on the spatialization and arrangement of musical quotation. This theme continues the piece's site-specific concerns by being entirely comprised of music recorded by UNT College of Music musicians. There are thematic, aesthetic, and practical reasons for this. As it related to spatial aesthetics, one of my intentions was to emulate and thematize the experience of being in a music building where many different types of music are constantly being played in a variety of locations. As snippets of music emanate from various speakers over the course of the installation, the idea was that it would combine with the sounds of actual students practicing in the various rooms around the building, whose music would, in essence, become a part of the installation itself.

On a purely pragmatic level, I chose to capitalize on one of my own privileged positions in the society of the College of Music, that of being the lead audio engineer at the CoM Recording Studio. In this position, I have access to years of recordings that I had conducted in the studio, consisting of a variety of instruments and types of music, though the types of music represented skewed heavily toward classical music, specifically orchestral excerpts. In order to select this music, I restricted myself to the last two years of recordings and I aimed for a wide variety of instrumental representation. In this process, I asked each musician on that list for permission to use their recordings. I did not use any recordings for which I did not receive permission from the musicians who were recorded.

Table 3: Diagram showing assignment of vocal loops to speakers

Singer	Word	Speaker
Natalie Manning (Alto)	Sky	1
Natalie Manning (Alto)	Ooh	2
Elizabeth McGee (Soprano)	Room	3
Nicholas Garza (Tenor)	Spacious	4
Natalie Manning (Alto)	East	5
Elizabeth McGee (Soprano)	Treetops	6
Natalie Manning (Alto)	Night	7
Elizabeth McGee (Soprano)	Skies	8
Nicholas Garza (Tenor)	Deep	9
Natalie Manning (Alto)	Day	10
Natalie Manning (Alto)	Time	11
Nicholas Garza (Tenor)	From	12
Elizabeth McGee (Soprano)	Deep	13
Natalie Manning (Alto)	Day	14
Nicholas Garza (Tenor)	Go	15
Zhi Li (Guitarist)	Hammer-on bass strings, used in sub for low frequency response	16

The general trend of this section of the piece progresses from instrumental sounds to vocal sounds, which then transition into the fourth section, which is primarily comprised of vocal sounds made by animals. When it came to choosing vocals and words, I chose to select words that primarily evoked spatial, temporal, and nature-based associations, such as “treetops,” “east,” “earth,” and “deep.” Additionally, words were selected that imply changes of time that influence our perception of space, such as “day” and “night.” Each loop was assigned to a unique speaker and the arc of the section moves from vocal loops that are run through the sine-wave-based impulse responses, which are gradually removed to leave only the sung words.

2.10 Textual Quotation: Authority, Neutrality, Institution, Self-Referentiality

One of the most important sources of material, which occurs in every section except the final, nature-based section, is the use of spoken quotation. A complete list of these quotes and their attribution is found in Appendix C. This material is most often spoken by two voices found in the "Speech" section of the "Accessibility" area of the Macintosh High Sierra Operating System, which enables text on the screen to be spoken by a chosen voice, what is called a "system voice."[109] The two voices that I chose were male and female, the male system voice being "Tom" and the female system voice being "Samantha."[110] I chose these particular voices because they seemed to have the most human sounding timbres and vocal cadences. I decided to use these built-in, robotic voices for several reasons, aesthetic and practical. Practically, this is an easy way for any text to be presented in an auditory form without needing to find a real person to speak the text or to record the text yourself. Additionally, this method of presenting textual material has, what would appear to be, a built-in neutrality.[111] The voices are clearly machine-like, which exempts them from the most vulnerable characteristics of human speech. Even when they make mistakes, there is no vulnerability, in that it is clearly a flaw in the technology rather than a personal mistake. When humans are asked to speak publicly or record, there is always an opportunity for mistakes, unintentional sounds, shaking of the voice, etc. all of which

[109] "Change the voice your Mac uses to speak text," *Apple Inc.*, 2021, Accessed April 16, 2021. https://support.apple.com/guide/mac-help/change-the-voice-your-mac-uses-to-speak-text-mchlp2290/mac

[110] Ibid.

[111] Alex Hern, "Apple made Siri deflect questions on feminism, leaked papers reveal," *The Guardian*, September 6, 2019, Accessed April 16, 2021. https://www.theguardian.com/technology/2019/sep/06/apple-rewrote-siri-to-deflect-questions-about-feminism

create the possibility of anxiety, embarrassment, judgement, etc. However, the unique timbre of a human voice is one of the most evocative and interesting timbres we can experience, a timbre that always implies subjectivity.[112]

The subjectivity implied by a real human voice and the presumed neutrality of a machine-based voice suggests very interesting aesthetic terrain to me. Though the voices of Tom and Samantha may suggest neutrality, they are not neutral. First, though they do not actually exist as real people, they seem to be white. The way in which they articulate their words and the timbres of their voice are clearly designed to suggest a very specific cultural identity and cultural position. The fact that cultural information is communicated by the timbre of these artificial voices, is clearly illustrated by the choices that are offered to users of the Accessibility system by Apple. Though all the voices speak English, there are options to have voices from a variety of countries speak the text on your screen. This includes voices from Saudi Arabia, China, Hong Kong, Taiwan, Czechia, Denmark, Belgium, Netherlands, Australia, India, Ireland, Germany, Greece, Israel, Hungary, Japan, South Korea, Poland, Brazil, etc. These voices may be downloaded as desired, but Samantha comes as part of the "default" voices that are included in this area and Tom is grouped with the other group of default voices, that of U.S. English males, in the customizable section.[113]

The "default" quality of these voices suggests not only neutrality, but also authority. The cadence, timbre, and methods of articulation align these voices with

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[112] Barthes, *Image-Music-Text.* See "The Grain of the Voice."

[113] Ryan Ariano, "How to change the text-to-speech voice on your Mac computer, or give it a new language," *Business Insider*, businessinsider.com, September 23, 2020, Accessed April 16, 2021. https://www.businessinsider.com/how-to-change-speech-voice-on-mac

voices we associate with certain societal roles. In many ways, Tom and Samantha sound like academics, radio announcers, newscasters, emcees at classical music concerts, etc. In this sense, they remove the subjectivity of the author who has written the text and suggest a position of objective truth and knowledge when they filter the textual material chosen. The text that is spoken with their voices combines with the timbre of their voices to produce an amalgamated sonic object that is informational and aesthetic. The timbres of Tom and Samantha's voices gel with the spoken material to produce different effects. For instance, when they speak material taken directly from the UNT College of Music website or from a dictionary, the timbres of their voices combine with the words to sound completely unremarkable and natural.

2.11 Visual Content

Just as I used a site-specific rationale to determine the audio materials for this work, I also used one for the creation and choice of video content. The visual material of *"…threaded through"* is built upon the visual material that is most predominant in the College of Music Main Building, that of bricks. The building is replete with them. As a result, when seeking to engage with the visual language of the building, my thoughts were to interact with the individual bricks that make up the building. Given the sheer preponderance of bricks in the building, the individual bricks are generally unnoticed, but each brick is unique. The visual language of this building prompts many parallels with the institutional nature of the building.[114] Each brick is merely a part in a greater whole and the individuality of each brick or even brick wall becomes only a part of the

[114] Pink Floyd, "Another Brick in the Wall," *The Wall*, 1979.

structure. As it concerns individuality and uniqueness, the stretcher bond, which characterizes the bricklaying patterns of the building, is the least unique type of pattern. We are all familiar with this pattern and the ubiquity of the pattern may leave the College of Music Main Building appearing non-descript to some people. However, the yellow brick stretcher bond is not the only visual element of the building, though it is the most notable. Another key element of the building is its dimensionality. The shape of the building and the scale of many of its walls are unique as are their positioning in space and how they are positioned in relation to windows, stairwells, etc.

With the mundanity of the brick patterns in mind and the knowledge of the uniqueness of the walls, I decided to create six videos with resolutions that matched the dimensions of certain patches of wall throughout the building. Each of these sites are somewhat unique to the building and attention to them is attention to the unique spatial arrangement and orientation that the building itself has. The full illustrations of each of these sites is found in the second part of this document. These sites were the starting points for the videos, the structural basis, but I chose a variety of other visual materials to build upon the structural canvas of the six brick walls. In this regard, I restricted myself heavily to using the imagery provided by the brick patterns at these sites, but used a variety of methods to engage with these.

2.12 Color, Place, Symbolism

When using the bricks as the primary geometric and compositional component, one key element to create variety and elucidate the patterns that exist within the walls was the use of color. As with the audio, color can be used symbolically and associatively as well. There were three main colors that I used throughout many of the

videos, that of golden-yellow, red, and white. The color gold is an exaggeration of the natural color of the bricks, but also to my mind symbolizes a sense of prestige and a gilding of the bricks. All humans know the color of blood and red, in that sense, can be used as a color symbolic of humanness in general. White is a color that is often taken as implying neutrality just as the voice of Macintosh OS System Voices might imply neutralitu, but it is anything but neutral. White, apart from neutrality, can evoke bleaching, unbearable brightness, and bone. A color used specifically in the atrium area was the use of UNT Branding Colors, the hexadecimal colors of which were taken directly from the UNT Identity Guide Website.[115] This was used to form visual connections between the materials projected in the atrium and the institutional brand that conditions existence at UNT.

2.13 Columns, Bricks, Magnified Weaving Patterns

The visual pattern that I used most frequently was that of a column of bricks spaced apart by one row (see figure 7). This was used to begin each of the six videos. In a spatial and figurative sense, columns can be seen to represent structural soundness and hierarchies, not to mention phallic imagery. All of these have symbolic connections to the concept of the institution, particularly in the U.S.[116] This visual structure connects the identity of a single brick to a larger structural unit, the unit that creates the strength of the stretcher bond pattern, a series of interlocking columns that distribute weight equally to two subsidiary columns.

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[115] "UNT Identity Guide," *University of North Texas*, 2021, Accessed April 16, 2021. https://identityguide.unt.edu/create-our-look/color

[116] Ben Valentine, "Is that the Washington Monument in Your Pants or Are You Just Happy to See Me," *Hyperallergic,* June 29, 2012, Accessed April 16, 2021. *https://hyperallergic.com/53623/washington-monument-porn/*

Figure 4: Image of column element projected onto wall of the Music Building

A unique feature of this particular type of column is that it cannot actually exist in reality, as there is a space between each of the bricks that comprise it and it can only be a single column if the bricks float. This column is somewhat similar to Donald Judd's

work *Untitled (1967)*, found at the Modern Art Museum of Fort Worth.[117] The notes for this piece on The Modern's website speak about how Judd's structure appears as a single unit, though it is obviously comprised of multiple parts.[118] There is a way to visually explain this structure as being comprised of a single part, which is that the colored column is a thread, which weaves through the wall. This connects the work to weaving patterns enabling a connection between fabric and brick to be made visually. This allows a more fluid, less rigid, visual area to be engaged with.

2.14 Arteries, Mortar, Threads

Another visual feature used prominently in the videos is the animation of the mortar lines with red lines. This feature was partially derived from a quoted definition from the Oxford English Dictionary, defining the atrium as a part of the human heart in which the blood is poured into, where the mortar between the bricks symbolize arteries. In the visual material lines are drawn, which are usually red. This links the quote of the atrium "pouring the blood into the limbs of the body" to the visual motifs chosen. In this sense, the mortar can be seen as arteries, blood, and also representing humanness. To return to the quote about artists, students, musicians, etc. being threaded through, I chose to view the movement of red lines through the bricks as symbolic of students of the music building seeking creativity within the grid of institutional structures. Additionally, this visual material aligns with the concept of thread in a way that is separate from the columns.

[117] Donald Judd, *untitled*, 1967.

[118] Ibid.

2.15 Grids and Content, Form and Content

One of the most important concepts in this piece is the concept of grids. Grids are a simple way of defining the spatial structures that all of the videos adhere to and the visual patterns of the laid bricks in the walls of the music building, but grids also can be understood in a temporal domain as expressing regularity or pulses. Additionally, grids express order, organization, institutionality, etc. To tie this piece to Miwon Kwon's discussion of site-specific art as "didactic" and "educational," I chose to include quotes in the third module from Rosalind Krauss's article "Grids," discussing the use of the grid in twentieth-century visual art.[119]

2.16 The Technology and the Building Itself

A highly important visual feature of the work and one that cannot be ignored in a site-specific work is the visual knowledge of the technology that produces the installation itself, as well as the visual features of building in which the piece is installed. As it concerns, the "look" of the College of Music Main Building, specifically the southern half of the building separated by Voertman Hall, the grid predominates. The style of architecture is Brutalism, an architectural style that is intended to starkly display the materials used in the construction of the building.[120] In this sense, it is a perfect architectural style for a work of this kind, given that the work concerns itself with making tangible the numerous cultural, institutional, musical, acoustic, and symbolic forces that condition the "place" of the music building. I have already discussed how the visual look of the building particularly in the bricklaying patterns influenced the selection of much of

[119] Kwon, "One Place."

[120] Banham, Barton, and Flowers, "Brutalism."

the visual material, but the use of the aesthetics of Brutalism also provide an interesting aesthetic justification for my decisions to place the speakers and projectors in full view of the audience.

As discussed in relation to acousmatic music, the concept itself implies that we can actually have a sourceless sound, but speakers themselves are sources and as such they signify more than just the sounds they produce, they signify engineering, time, and most particularly money. In *"…threaded through"* I made the decision to place the speakers on the floor and to position projectors so that they are clearly visible to spectators, with the projectors even shining into people's eyes depending on where they walk and look. Though there is a pragmatic reason for this decision, specifically that it would be cost and time-prohibitive to have the speakers and projectors hidden within the building, the free display of this technological equipment also plainly shows the significant material and financial resources of the College of Music, the Division of Composition Studies, CEMI, and the privileged access that I, the creator of the installation, have to these resources. Though the speakers and projectors, project sound and image into the space, they are also features of the installation and should not be ignored when considering the collection of sound, image, light, buildings, text, and equipment that comprises the artwork as-a-whole.

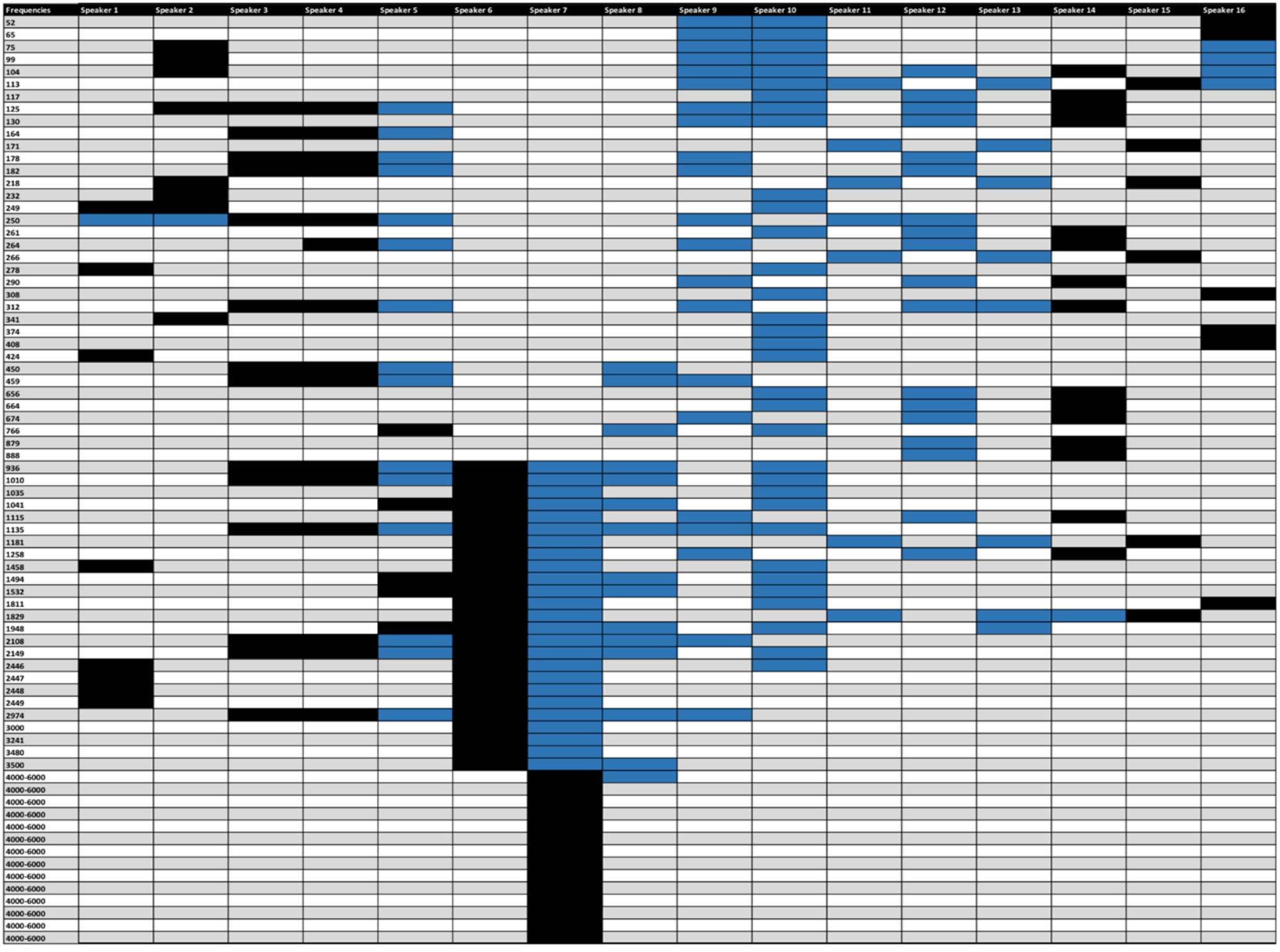
2.17 Brief Reflections on the Piece

As mentioned in the first part of this document, the concept of multitextuality was a highly influential concept in the creation of this piece. As I have explained, there are a large number of structures and relationships at play in this work, from the visual and geometric structures, the associative material of natural imagery, the institutional and

sociological function of time-markers, the social function of architecture, the sonic qualities of the songs of birds, amphibians, and insects, the meaning of the words spoken and sung throughout the work, the associations between natural and artificial, the associations we assign to spatial and colored elements, etc. There is not any inherent coherence between many of these structures. Disjunction and non-sequitur abound throughout, but these are found in equal proportion to connection and coherence. One of the interesting features of this piece to me, is the idea that simply by being presented in the same space, a coherence is granted to disparate materials through their spatial proximity. This is a highly interesting phenomenon to me in that it is a feature of the structure of music, art, and experience in general. There is no real reason a leaf should be green and, in visual art, the color of a leaf can be changed at will. This artistic choice can be linked to a multitude of other choices, imbuing that color with significance, that relates to far-flung areas of association, experience, and emotion that have no immediate logical connection. The choice of any structure is somewhat arbitrary, but the relationships that form between these structures in terms of coherence and connection not only enable imaginary spaces to be created, but for imaginary and real spaces to be overlaid upon each other in ways that reveals the nature of both.

Appendix A: Frequency Arrangement

Black boxes show frequencies that were chosen through testing at the location of the speakers. Blue boxes show frequencies that were derived from tested frequencies, but were chosen without testing at the site.



Appendix B: Animals Used

Type of Animal	Specific Animal
Bird	Great-tailed grackle
Bird	Tufted titmouse
Insect	Cicada
Bird	Killdeer
Bird	Turkey vultures
Insect	Cricket
Amphibian (not found in area)	American toad
Bird	White-eyed vireo
Bird	Great blue heron
Amphibian	Southern leopard frog
Bird	Red-winged blackbird
Bird	Mallards
Bird	Northern mockingbird
Bird	Red-bellied woodpecker
Bird	House finch
Amphibian	Woodhouse toad
Bird	Red-tailed hawk
Bird	Eastern phoebe
Bird	Northern cardinal
Bird	Blue jay
Bird	Great egret

Appendix C: Quotes Used by System Voices

Quote	Attribution/Derivation	System Voice
"…the fuzzy ambience of the known which gives man confidence in the known."	(Tuan, 87)	Tom
"The human body is that part of the material universe we know most intimately. It is not only the condition for experiencing the world, but also an accessible object whose properties we can always observe."	(Tuan, 89)	Tom
"Rocks are bones. Water is blood."	These are two statements derived from Tuan's description of Chinese and Native North American mythological constructs, which viewed rocks as the bones of the earth and water as the blood of the earth.	Tom
"To see and to think are closely related processes"	(Tuan, 10)	Tom
"Do you need materials for recruiting students or for promoting U.N.T. at conferences?" "Do you know a great alumni story?"	University Brand Strategy and Communications (University of North Texas 2021)	Tom
"Do you need help telling U.N.T.'s story visually?"	University Brand Strategy and Communications (University of North Texas 2021)	Tom
"Do you need to talk to the media?"	University Brand Strategy and Communications (University of North Texas 2021)	Tom
"Do you need to communicate with U.N.T.'s internal community?"	University Brand Strategy and Communications (University of North Texas 2021)	Tom
"University of North Texas College of Music Corporate and Foundation Benefactors…"	UNT College of Music Website (University of North Texas 2021)	Tom
"The Ryan Foundation"	UNT College of Music Website (University of North Texas 2021)	Tom
"Spec's Charitable Foundation"	UNT College of Music Website (University of North Texas 2021)	Tom
"The Presser Foundation"	UNT College of Music Website (University of North Texas 2021)	Tom
"The Lupe Murchison Foundation"	UNT College of Music Website (University of North Texas 2021)	Tom

Quote	Attribution/Derivation	System Voice
“Labatt Food Service”	UNT College of Music Website (University of North Texas 2021)	Tom
“The John and Bonnie Strauss Foundation”	UNT College of Music Website (University of North Texas 2021)	Tom
“Guitar Center”	UNT College of Music Website (University of North Texas 2021)	Tom
“Exxon Mobil”	UNT College of Music Website (University of North Texas 2021)	Tom
“Yamaha”	UNT College of Music Website (University of North Texas 2021)	Tom
“The Moody Foundation”	UNT College of Music Website (University of North Texas 2021)	Tom
“The ritualistic engagement of the public in performance art, turns the latter into a field for the reproduction of ideology, in so far as the artist is him/herself transformed into a powerful universalized representation.”	Louise Avgita, “Marina Abramović’s universe: universalising the particular in Balkan Epic” (Avgita 2012)	Samantha
“In software engineering and computer science, abstraction is a technique for arranging complexity of computer systems. It works by establishing a level of complexity on which a person interacts with the system, suppressing the more complex details below the current level.”	Abstraction definition from Computer Science Wiki (Computer Science Wiki 2019)	Tom
“If Stravinsky's tree, his first full thrust, covers the period from the Firebird to the Wedding, it is with Mavra that we begin to harvest the fruit of his admirable maturity.”	Darius Milhaud, Foreword to *Poetics of Music* by Igor Stravinsky (Stravinsky 1947)	Tom
“Site specificity used to imply something grounded, bound to the laws of physics.”	Miwon Kwon, “One Place After Another” (Kwon 1997)	Samantha
“If Minimalism returned to the viewing subject a physical corporeal body, institutional critique insisted on the social matrix of class, race, gender, and sexuality of the viewing subject.”	Miwon Kwon, “One Place After Another” (Kwon 1997)	Samantha
“…contemporary site-oriented works occupy hotels, city streets, housing projects, prisons, schools, hospitals, churches, zoos, supermarkets, etc., and infiltrate media spaces such as radio, newspapers, television, and the Internet.”	Miwon Kwon, “One Place After Another” (Kwon 1997)	Samantha
“Going against the grain of institutional habits and desires, and continuing to resist the commodification of art in/for the market place, site-specific art adopts strategies that are either aggressively antivisual–informational,	Miwon Kwon, “One Place After Another” (Kwon 1997)	Samantha

Quote	Attribution/Derivation	System Voice
textual, expositional, didactic–or immaterial altogether–gestures, events, or performances bracketed by temporal boundaries."		
"There are many sounds in the forest but one rarely has the chance to see the sources of most of them."	Francisco Lopez, "Environmental Sound Matter" (Lopez 1998)	Tom
"It's our decision – subjective, intentional, non-universal, not necessarily permanent – what converts nature sounds into music."	Francisco Lopez, "Environmental Sound Matter" (Lopez 1998)	Tom
"There are two ways in which the grid functions to declare the modernity of modern art. One is spatial; the other is temporal. In the spatial sense, the grid states the autonomy of the realm of art. Flattened, geometricized, ordered, it is anti-natural, anti-mimetic, anti-real. It is what art looks like when it turns its back on nature."	Rosalind Krauss, "Grids", (Krauss 1986)	Samantha
"In the temporal dimension, the grid is an emblem of modernity by being just that: the form that is ubiquitous in the art of *our* century, while appearing nowhere, nowhere at all, in the art of the last one."	Rosalind Krauss, "Grids", (Krauss 1986)	Samantha
"Given the absolute rift that had opened between the sacred and the secular, the modern artist was obviously faced with the necessity to choose between one mode of expression and the other. The curious testimony offered by the grid is that at this juncture he tried to decide for both."	Rosalind Krauss, "Grids", (Krauss 1986)	Samantha
"In suggesting that the success of the grid is somehow connected to its structure as myth, I may of course be accused of stretching a point beyond the limits of common sense, since myths are stories, and like all narratives they unravel through time, whereas grids are not only spatial to start with, they are visual structures that explicitly reject a narrative or sequential reading of any kind."	Rosalind Krauss, "Grids", (Krauss 1986)	Samantha
"But the notion of myth I am using here depends on a structuralist mode of analysis, by which the sequential features of a story are rearranged to form a spatial organization."	Rosalind Krauss, "Grids", (Krauss 1986)	Samantha
"I do not think it is an exaggeration to say that behind every twentieth-century grid there lies, like a trauma that must be repressed, a symbolist window parading in the guise of a treatise on optics."	Rosalind Krauss, "Grids", (Krauss 1986)	Samantha
"Atrium"	"atrium, n.". OED Online. March 2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom
"The central hall or court of a Roman house."	2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom

Quote	Attribution/Derivation	System Voice
“In a public building, a usually skylit central court rising through several stories and surrounded by galleries at each level with rooms (shops, offices, etc.) opening off them. Originally U.S.”	2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom
“Either of the two upper cavities (*left* and *right* atrium) of the heart into which the veins pour the blood.”	"2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom
“Stairwell, the shaft containing a flight of stairs, a well.”	"stair, n.". OED Online. March 2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom
“Wing”	"wing, n.". OED Online. March 2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom
“Each of the organs of flight of any flying animal, as a bird, bat, or insect.”	"wing, n.". OED Online. March 2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom
“A subordinate part of a building on one side of the main or central part. Also in extended use, any more or less separate section of a building, esp. of a hospital or prison.”	"wing, n.". OED Online. March 2021. Oxford University Press. (Oxford English Dictionary 2021)	Samantha and Tom

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PART II

SCORE INSTALLATION INSTRUCTIONS

“...threaded through”

A site-specific, audiovisual installation for the University of North Texas College of Music Main Building

Mark Vaughn

2021

“...threaded through”

for 16-channel audio,
6-channel video,
and the UNT College
of Music Main Building

30 minutes

Denton, TX

2021

Mark Vaughn

Prefatory Notes

The title of this work, *"…threaded through," i*s taken from a longer quote by the artist Robert Smithson. Smithson said, "I'm not really discontented. I'm just interested in exploring the apparatus I'm being threaded through… and to me that's a legitimate interest." The apparatus that Smithson names here is the art world of 1972, a world comprised of buildings, spaces, galleries, etc., but also of the intertwined economic, social, aesthetic, and ideological forces that conditioned and continue to condition a career in art. Prior to his death in 1973, Smithson's artistic practice dealt with both the physical and conceptual influence of space and location in the experience of an art work, by making both site-specific and "nonsite"-specific art. In this, Smithson and many other artists developed the aesthetics of site-specificity, land art, and institutional critique, allowing them to focus their artistic work on both the institutional realities and irreproducible physical spaces they experienced.

In the practice of contemporary music creation, reproducibility, consistency, and mass distribution is the norm to aspire to, a general phenomenon in the arts noted by Walter Benjamin in 1936. This norm has only become more ingrained with the advent of computer technology; economic globalization; the concurrent rise of affordable media technology with a gig-based economy; and the unspoken requirement that every artist now be an easily definable brand, who can be assessed, marketed, and acquired through quick and simple financial transactions. These forces shape not only the business of music, but the aesthetics, by prioritizing profitable artistic decisions at the expense of other, less profitable, decisions.

These thoughts are the precursor to this work, which is created specifically for the UNT College of Music Main Building, a building that exists not only as a physical space, but as a place of significant institutional power; a place in which ideologies are both perpetuated and challenged; a place that provides and denies resources for a variety of aesthetic perspectives; a place that grants artistic and academic legitamacy through awards, scholarships, and employment; a place that produces capital (symbolic, cultural, economic, etc.); and a place in which a significant part of the social, artistic, and intellectual lives of its students, staff, faculty, and administrators are lived. In order to foreground the unique significance of this place in a musical work, a philosophy of reproducibility or practicality is not sufficient. The aesthetic experience of both this place and this piece are conditioned by the unique identity, position, and experience of each person who lives it. I believe the irreproducibility of the individual experience is central to all aesthetic experience in equal proportion to the experience of connection, belonging, or agreement, which is so often held to be the ultimate purpose of music. This work is a celebration of that idea.

Overview of Installation and Score

This installation consists of sixteen audio files, each of which require a speaker, as well as six individual videos, each of which require a projector. These are placed in specific locations throughout the southwest wing of the Main Music Building at the Univerisity of North Texas. Fundamentally, the main requirements of this piece are the ability to project the audio and video in synchronization and to map the videos to the

brickwork of specific walls, which are illustrated in this document.

There are a variety of ways to accomplish this technical problem and any one of them is acceptable as long as the ulitmate result is the same. My approach to solving this problem has been to run the speakers and projectors in three modules, each of which are run from a desktop computer. This document, what I am calling the "score" for the installation consists of directions for placement, setup and design of the installation in accordance with this modular approach.

What follows in this document are the directions, interpretative information, and crucial points for enacting this installation.

NOTE: This score uses an annoted map of the Music Building, which was acquired from the UNT College of Music website. The unannotated map can be found at https://music.unt.edu/sites/default/files/UNT-Music-Building-Map.pdf This map predates the 2020 renovation of the Merrill Ellis Intermedia Theater.

Specific Performance Requirements

- This installation consists of audio and video files that are looped every half-hour until the determined end of the installation. The loop may be played only once or for as many hours is decided upon.
- This loop should be started at times that correspond to the half-hour or hour in clock time, as it is meant to synchronize roughly with the sound of the UNT Clock Tower Carillon, which sounds every half-hour.
- This installation may be performed during the day, but the light in the building will likely interfere with many of the projections. The ideal time to view and experience the installation is at night. In this respect, lights should be dimmed as much as possible around the projections.
- As it concerns synchronization of the media, ideally all media will be perfectly synchronized in time, but if using the modular approach outlined here, the modules themselves may be synchronized within five seconds of each other, as the installation covers a large expanse of space and the synchronization between modules is not entirely apparent. However, in every case, the media within each module should always be synchronized, in order for the sound and image relationships to be experienced.

Specific Technical Requirements

- In order to execute this installation, the media will need to be acquired from the composer. Contact the composer at www.mark-vaughn.com to acquire the media for installation.
- The two main technological requirements for this installation are, first, the ability to simultaneously play all the audio and video files and, second, to map the videos to the projection sites. This requires software capable of projection mapping, multi-channel audio output, and multiple video outputs. This could be

run from multiple pieces of software simultaneously or from a single piece of software, such as Max/MSPI/Jitter or Touch Designer.

- Three separate patches made in the software Touch Designer were used in the initial performance to run audio, video, and projection mapping from a single piece of software and the computer respective to the three modules. A simple OSC setup was used to trigger all the modules simultaneously. To acquire Touch Design patches designed for running this installation, please contact the composer at www.mark-vaughn.com
- Apart from the specific coordination of the media, this work requires a great deal of audiovisual equipment. See complete list of equipment below and the equipment lists by module found later in this document for specific information.
- This document assumes that those implementing this installation have experience with audiovisual technical setup prior to this and therefore does not provide basic information on common uses of or common connections between equipment.
- The setup for this installation will require multiple people and should be afforded at least two days for setup.
- Audio levels will need to be monitored over the course of the installation.
- Additional assistance for monitoring equipment during the installation may be required.

General Tips

- It will likely be helpful to do the projection mapping after dark. In particular, Projection Sites 2, 3, 5, and 6 are especially difficult to see before dark.
- Some lights in the building can be covered with aluminium foil if the light is not able to be turned off, such as the light above Projection Site 6 in the breezeway. This light will be on after dark, potentially obscuring the projection.
- All cable runs need to be gaffed very well in order to maintain safety.
- With the projector positions given here, the projectors will shine into audience members' eyes at times. It may be helpful to post signs cautioning audience members on the brightness of the projectors at times.

Complete List of Equipment Needed for Installation

[3] Sturdy tables for computer monitors, interfaces, and computers

[3] Desktop computers with 3 video outputs

[3] Computer monitor with a keyboard and mouse, each

[3] 8-channel audio interfaces

[3] 8-channel MIDI control surfaces or mixing boards

[1] Short-throw HD projector with stand

[5] HD projectors with stand

[15-16] High-quality studio monitors (16 speakers if no sub)

[1] Subwoofer (preferred for **Speaker 16**)

[3] 50 ft HDMI cables

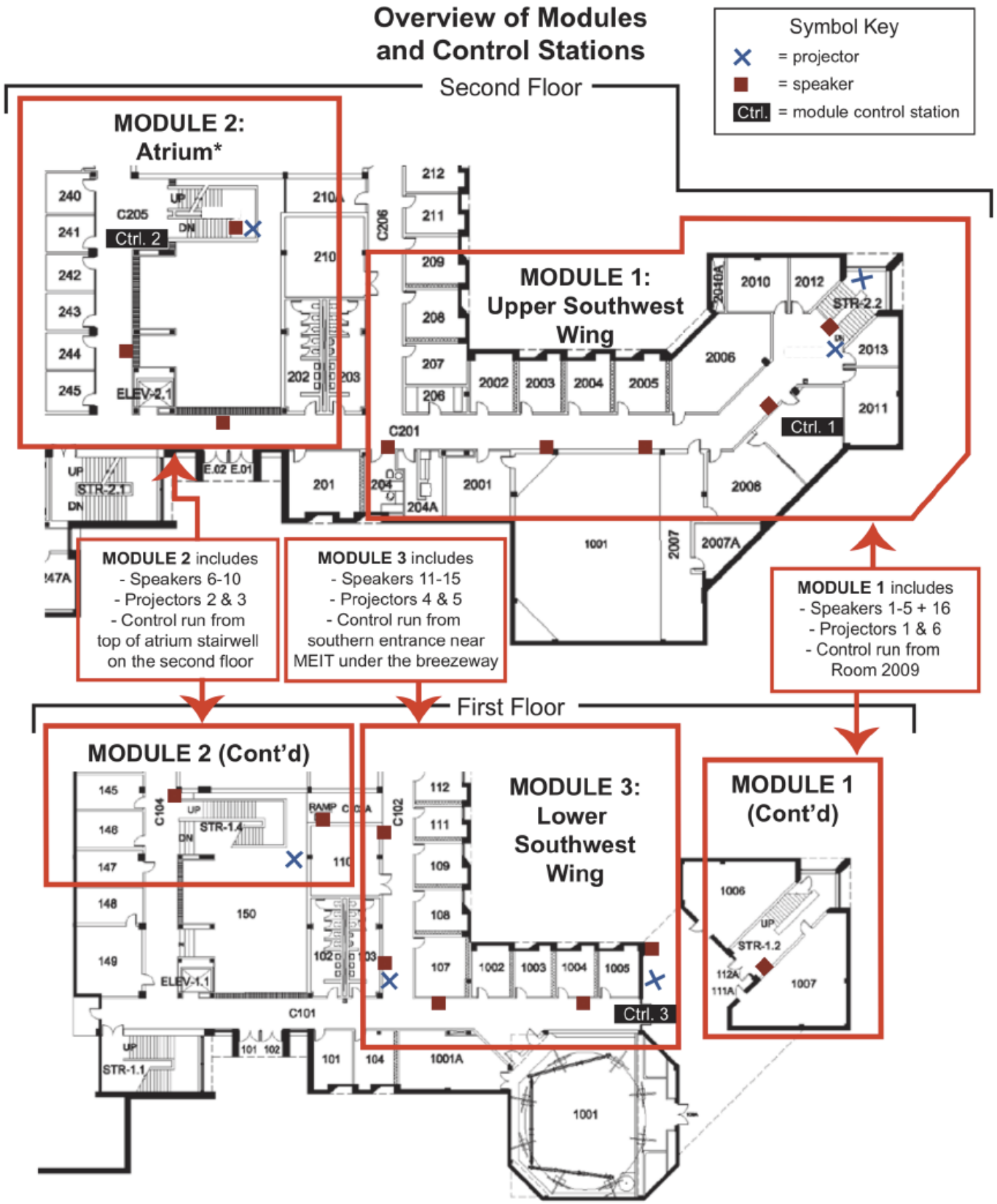
[3] HDBT transmitters and receivers

[3] 100 ft CAT 6 cable

[24] IEC power cables and extension cords

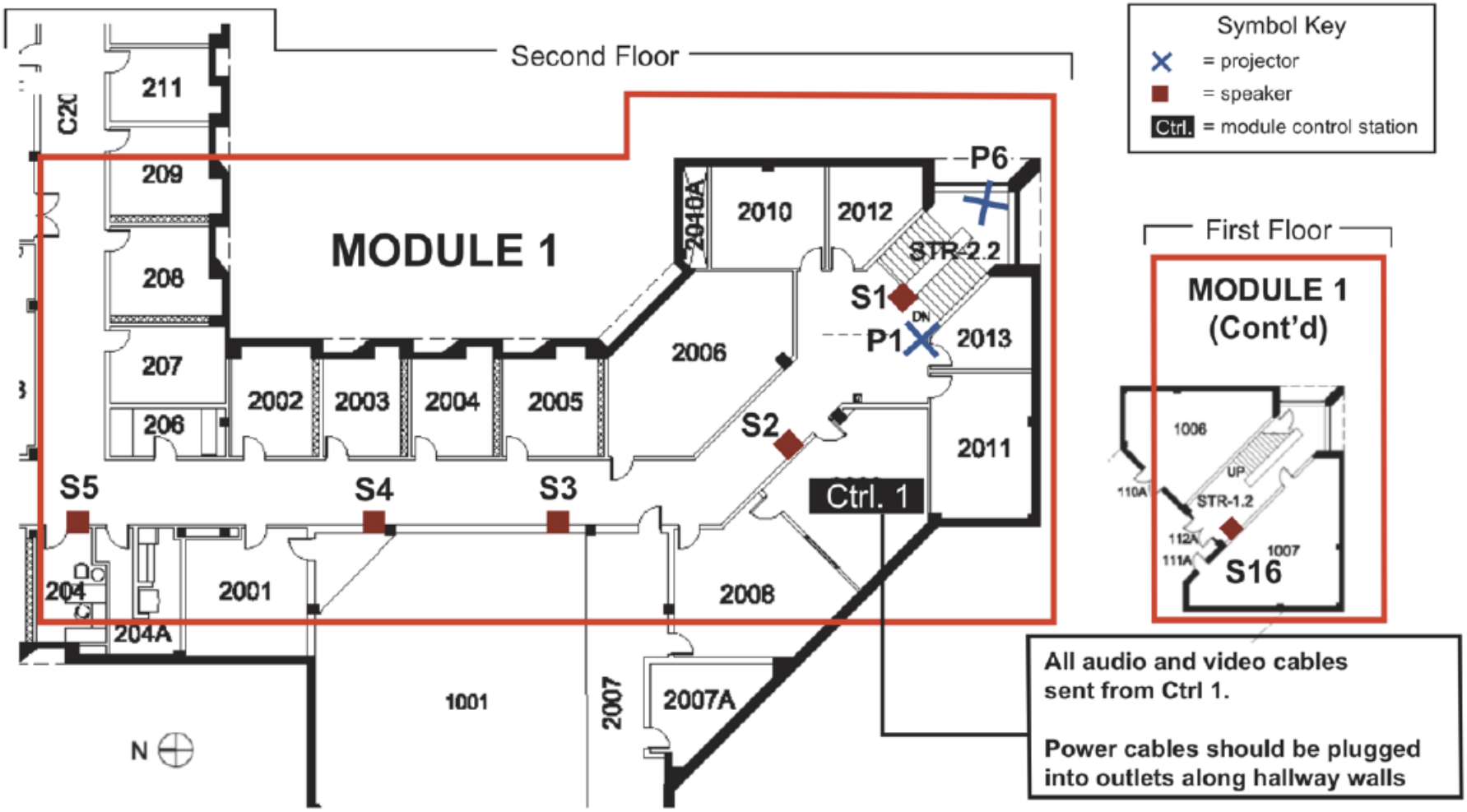
[6] 100 ft XLR cables

[12] 50-75 ft XLR cables (used for **S1-4**)



** Module 2 contains Speaker 8 which should be positioned on the stairway landing between the Recital Hall and the second floor, not shown here.*

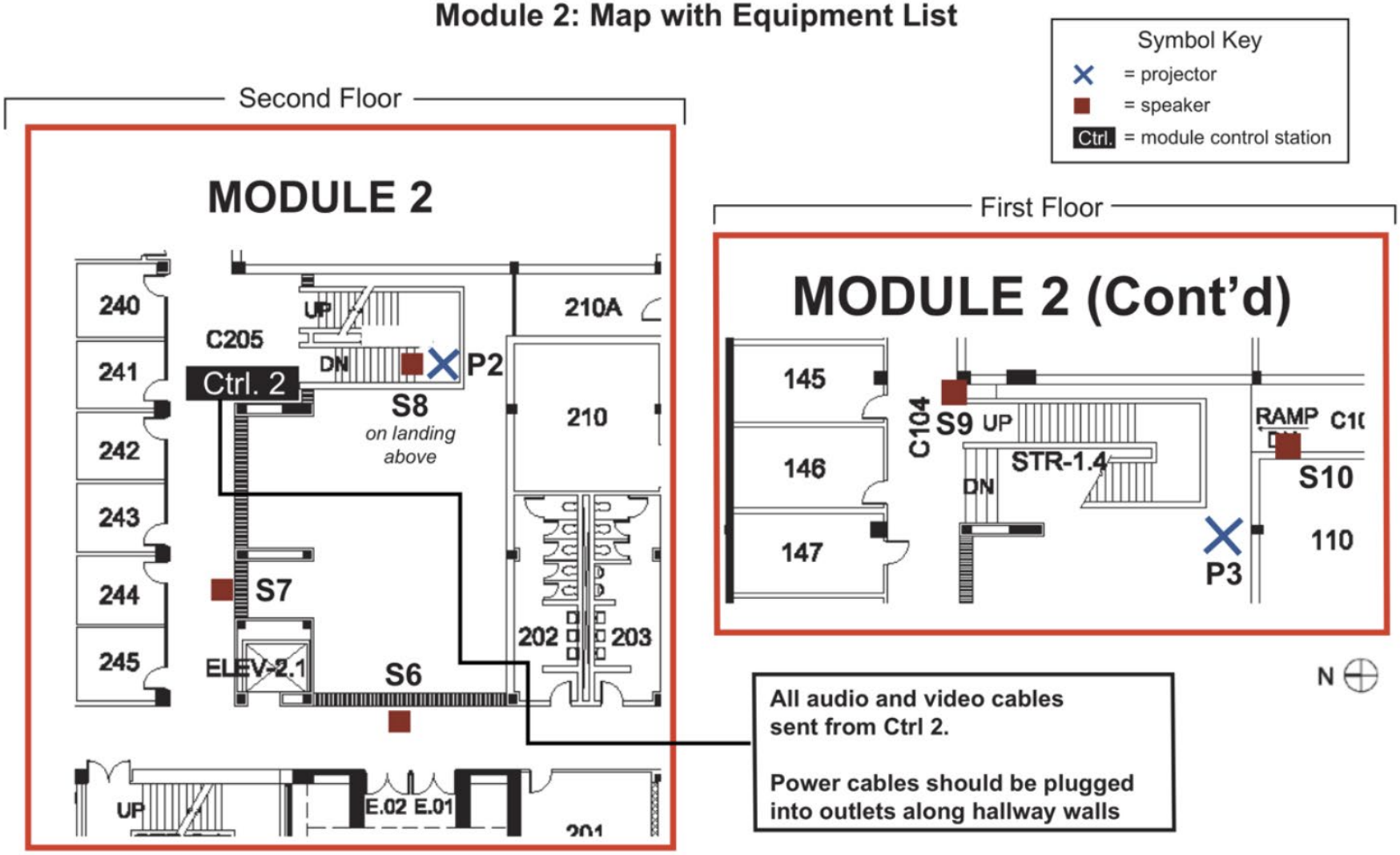
Module 1: Map with Equipment



[1] Table for monitor, interface, and computer (at **Ctrl. 1**)
[1] Desktop Computer w/ 3 Video Outputs (at **Ctrl. 1**)
[1] Computer Monitor w/ Keyboard & Mouse (at **Ctrl. 1**)
[1] 8-channel Audio Interface (at **Ctrl. 1**)
[1] 8-channel Mixing Board or MIDI Control Surface (at **Ctrl. 1**)
[1] Short-Throw HD Projector w/ stand (used as **Projector 1**)
[1] HD Projector w/ stand (used as **Projector 6**)
[5-6] High-Quality Studio Monitors (**Speakers 1-5** and **16** if no sub)
[1] Subwoofer (preferred for **Speaker 16**)

[1] 50 ft. HDMI Cable (sent to **Projector 1**)
[1] HDBT Transmitter & Receiver (**Computer** -> **Projector 6**)
[1] 100 ft. CAT 6 Cable (connect **HDBT Devices**)
[8] IEC Power Cables + extension cords (w/ **All Devices**)
[2] 100 ft. XLR Cables (used for **S5 & S16**)
[6] 50 ft. XLR Cables (used for **S1-4**)

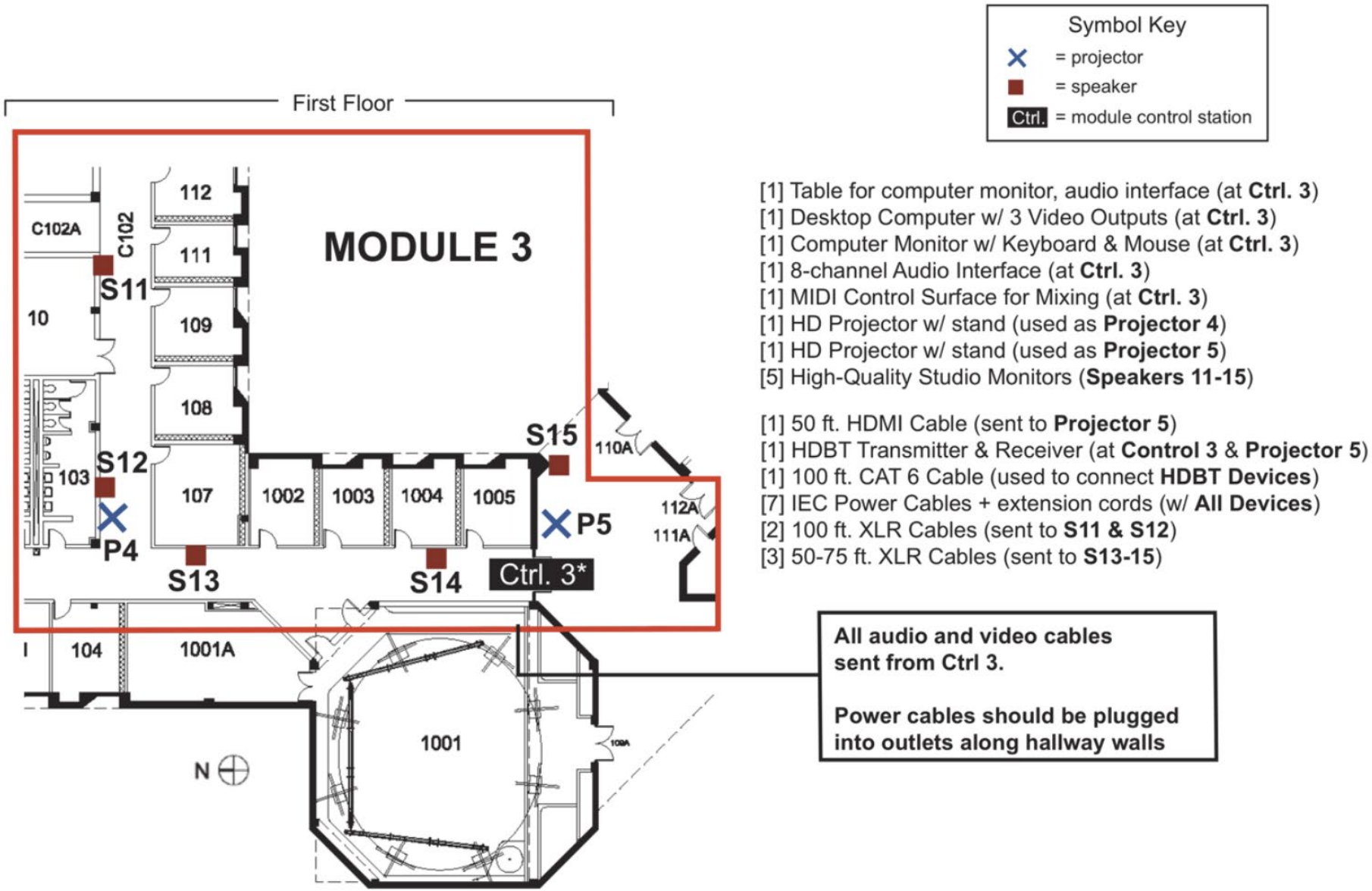
Module 2: Map with Equipment List



[1] Table for monitor, interface, and computer (at **Ctrl. 2**)
[1] Desktop Computer w/ 3 Video Outputs (at **Ctrl. 2)**
[1] MIDI Control Surface for mixing (at **Ctrl. 2**)
[1] Computer Monitor w/ Keyboard & Mouse (at **Ctrl. 2**)
[1] 8-channel Audio Interface (at **Ctrl. 2**)
[1] HD Projector w/ stand (used as **Projector 2**)
[1] HD Projector w/ stand (used as **Projector 3**)
[5] High-Quality Studio Monitors (used as **Speakers 6-10**)

[1] 50 ft. HDMI Cable (sent to **Projector 2**)
[1] HDBT Transmitter & Receiver (**Computer & Projector 3**)
[1] 100 ft. CAT 6 Cable (to connect **HDBT Devices**)
[7] IEC Power Cables + extension cords (w/ **All Devices**)
[2] 100 ft. XLR Cables (used for **S6 & S10**)
[3] 50-75 ft. XLR Cables (used for **S7-9**)

Module 3: Map with Equipment



*This version of the map of the Music Building predates the 2020 renovation of the Merrill Ellis Intermedia Theater. During that renovation a glass walled foyer was added at the location of “Ctrl. 3”. The control station should be set up along the east wall of that small foyer.

Projection Site 1: Second Floor Hallway

1. This image shows the rectangular area that should be selected with the projection-mapping software.Video 1 should be used at this location

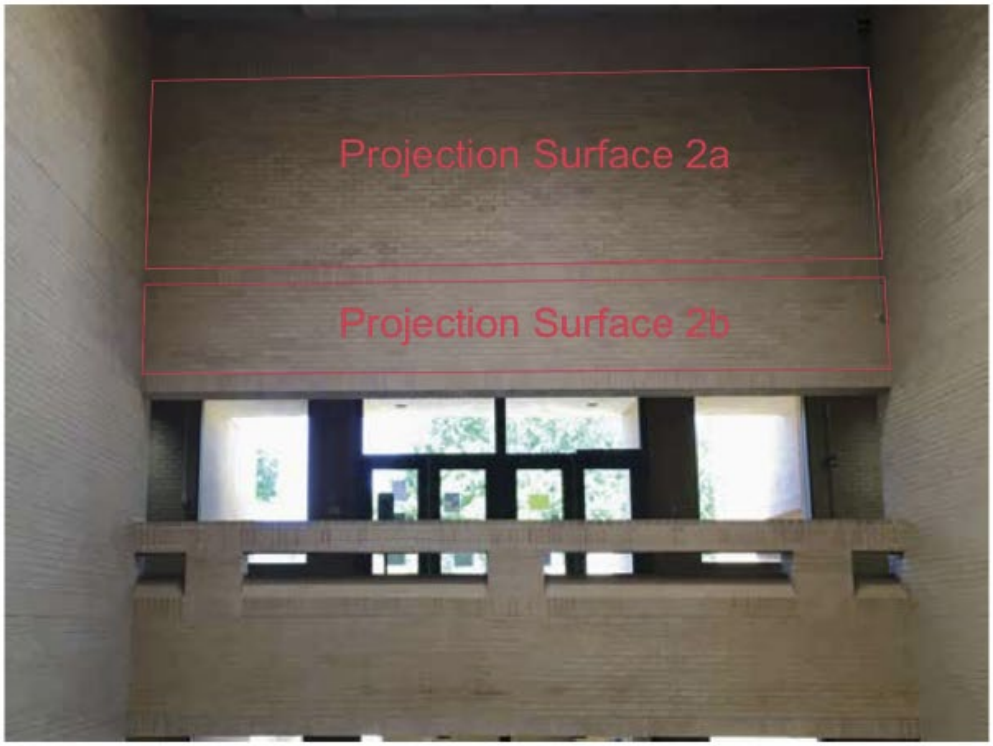
There is a slight diagonal tilt to the right side of the surface caused by the bricklaying at this site. This should be accounted for when mapping, as shown here. The bottom border is the mortar above the vertically-laid bricks and the ceiling and wall-break determine the left and right borders.

The projector should be a short-throw projector placed between the top of the stair and the door to Room 2013.

2. This image shows the brick template designed for this space overlaid on the projection surface. There are still some slight inconsistencies between the template lines and the mortar, but this demonstrates the type of mapping that can be achieved simply through rectangular selection.

To adjust the lines more finely, you can use a grid-based warping function. This function is called “Grid Warp” in KantanMapper and “Mesh Warping” in Mad Mapper.

Projection Site 2: Upper Atrium



1. This image shows the two rectangular areas that should be selected for Projection Site 2.The videos Video 2a and Video 2b should be used in this location.

Each video should be run through two separate projection masks.
There is no need to crop out the metal pipe on the right side.

The borders for these areas are determined by the vertically-laid bricks above and below and the edges of the wall.

The projector should be placed on the stairwell landing between the first and second floor.

2. This image shows the brick templates designed for this space overlaid on the projection surfaces. There are still some slight inconsistencies between the template lines, but it will be very time-consuming to adjust precisely with grid warping here. It is not strictly necessary.

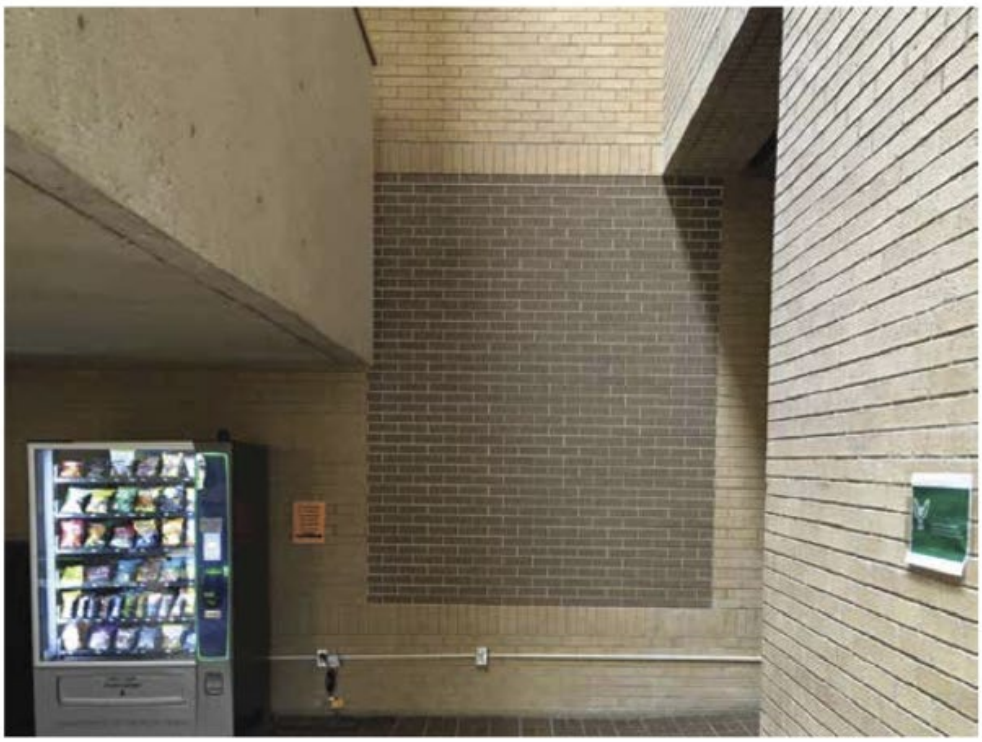
Projection Site 3: Lower Atrium

1. This image shows the rectangular area that should be selected for Projection Site 3.Video 3 should be used in this location.

The projector should be positioned so it will project light behind the concrete stairwell in the rectangular formation shown.

The upper and lower borders for this surface are determined by the mortar around the vertically-laid bricks. The left and right borders will have to be assessed using this picture.

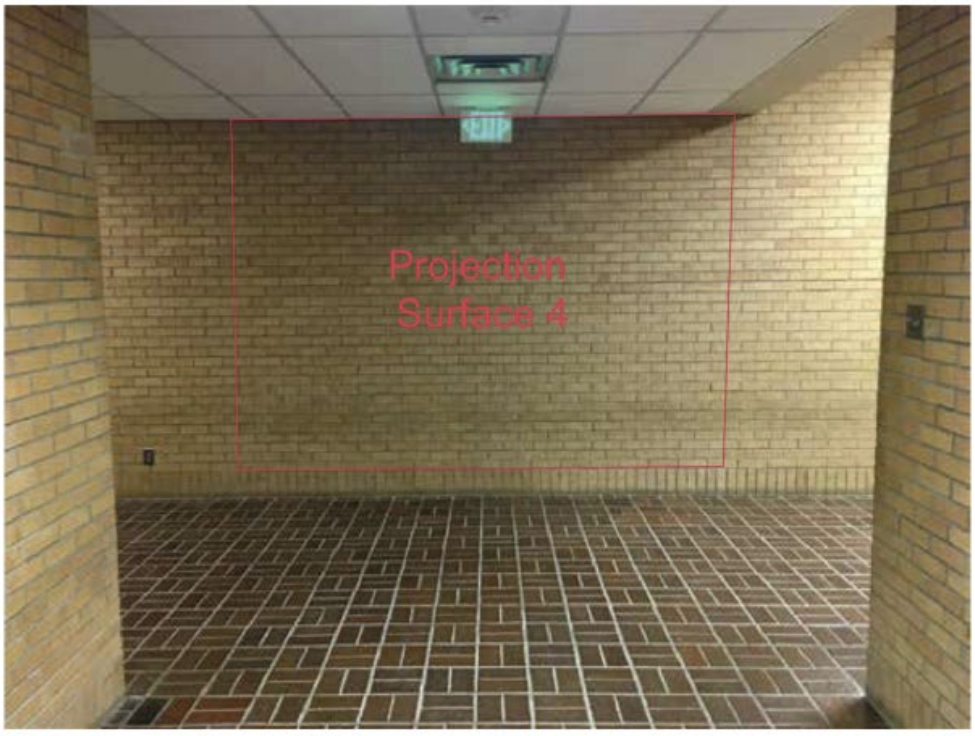
The projector should be placed near the right wall shown in this picture.



2. This image shows the brick template designed for this space overlaid on the projection surface.

Grid warping can be used as necessary here.

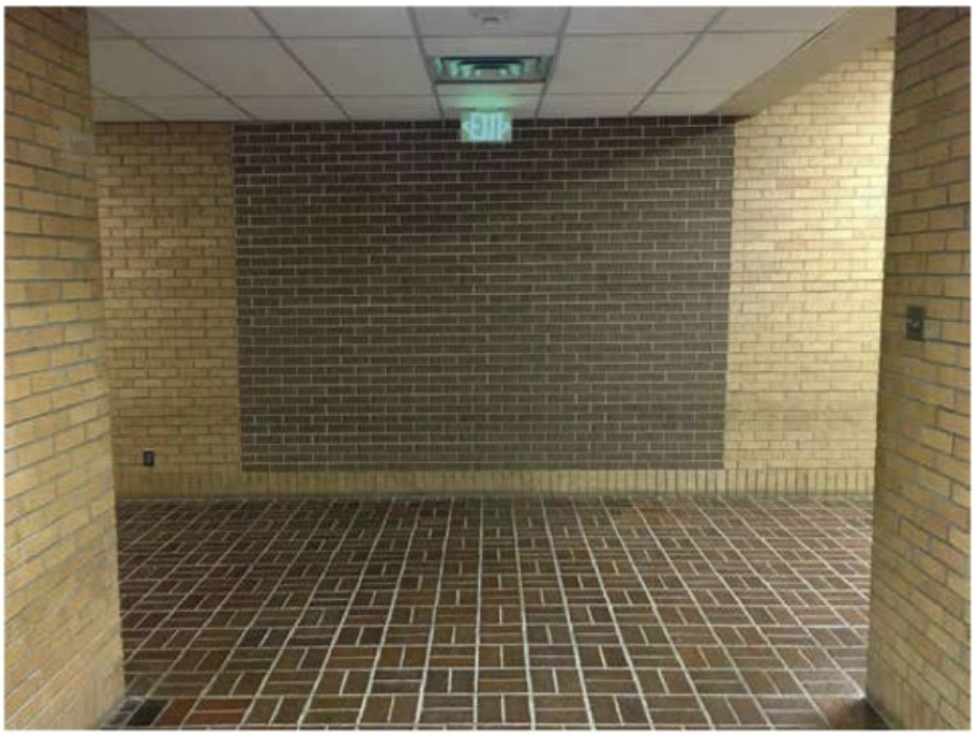
Projection Site 4: First Floor Hallway



1. This image shows the rectangular area that should be selected for Projection Site 4.Video 4 should be used in this location.

The upper and lower borders are determined by the ceiling and the vertical bricks, but this picture should be consulted for the side borders.

The projector should be placed far enough back in the hall to cover the entire area, if available a short-throw projector would be ideal. The projector will not be able to shine light behind the exit sign.



2. This image shows the brick template designed for this space overlaid on the projection surface.

In order to avoid shining light on the exit sign, a rectangular mask colored black should be drawn over the area of the exit sign.

Grid warping may be needed here as well.

Projection Site 5: Breezeway

1. This image shows the rectangular area that should be selected for Projection Site 5.Video 5 should be used in this location.

The projector will not be able to shine light behind the exit sign, as it will have to be positioned fairly far back in the hall

The upper and lower borders are determined by the ceiling and the vertical bricks. The side borders are determined by the wall's borders.

The projector should be placed farther back in the alcove, next to the glass foyer leading to the first floor hallway.

2. This image shows the brick template designed for this space overlaid on the projection surface.

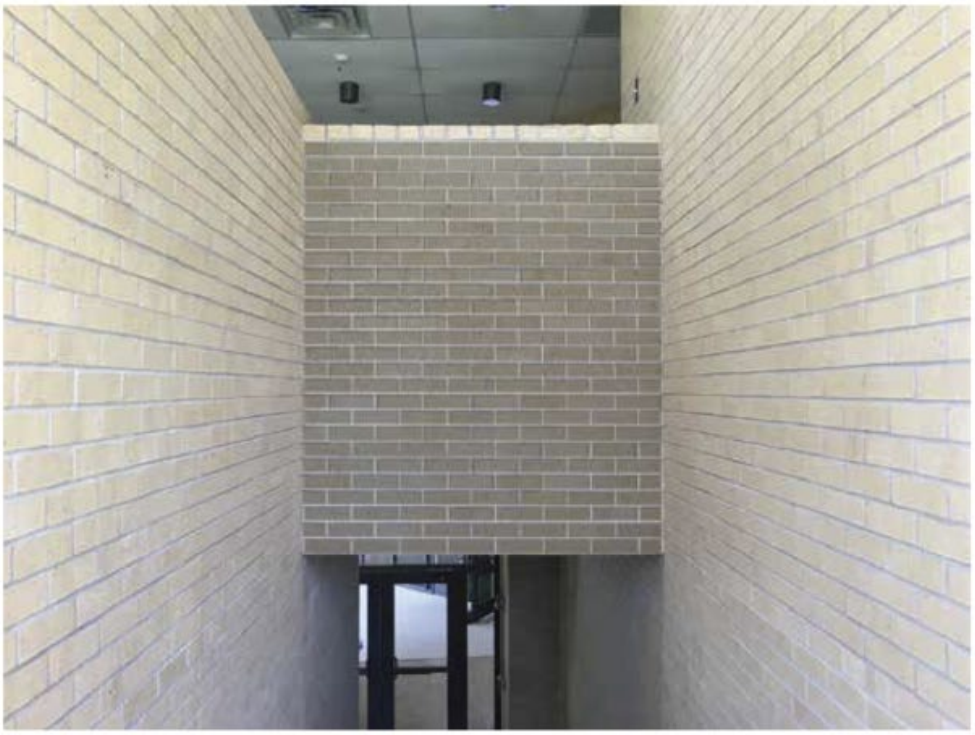
Grid warping may be needed here.

Projection Site 6: Southwest Stairwell

1. This image shows the rectangular area that should be selected for Projection Site 6.Video 6 should be used in this location.

The upper border is determined by the mortar below the cross-laid bricks. The left, right, and bottom borders are determined by the borders of the wall.

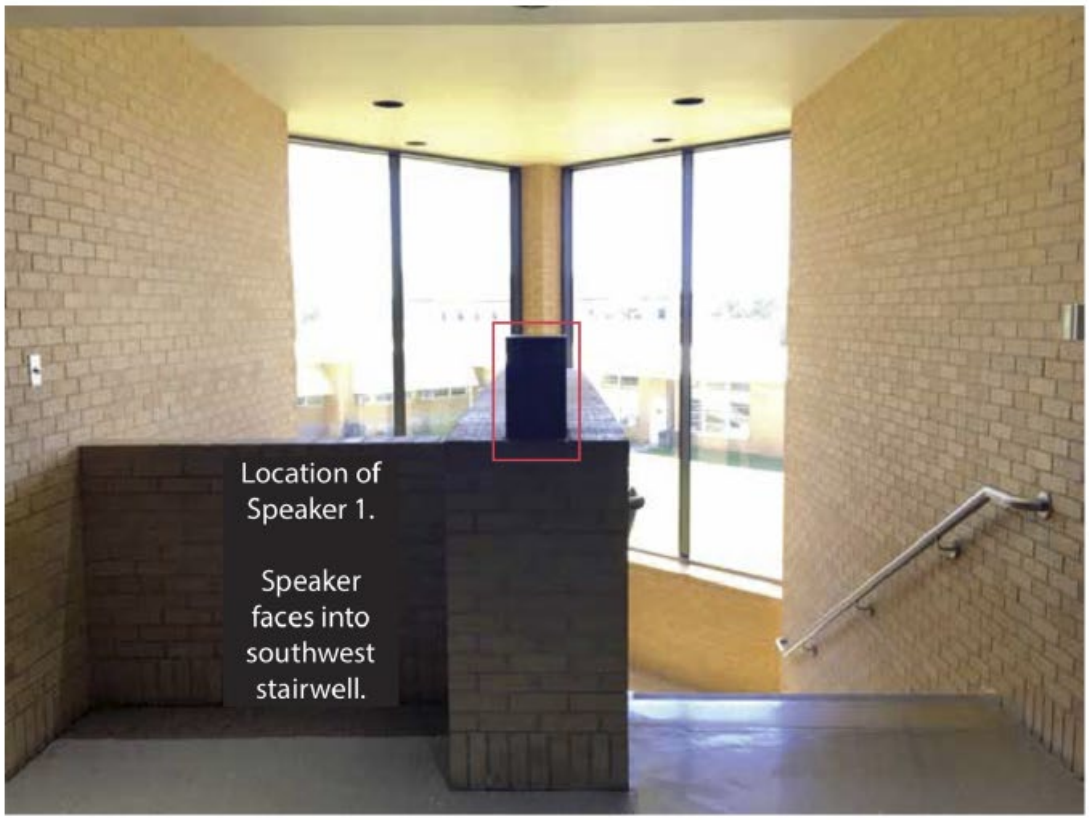
The projector should be placed on the landing, as close to the right wall as possible, while still covering the entire area.

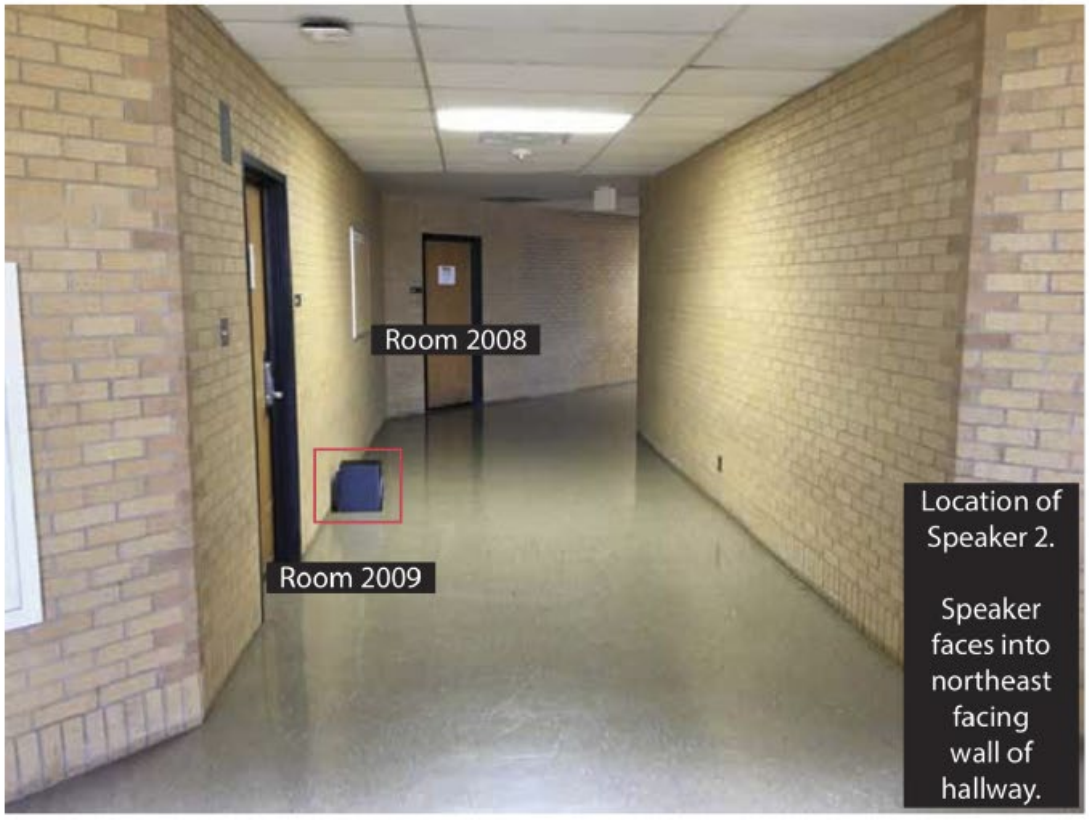


2. This image shows the brick template designed for this space overlaid on the projection surface.

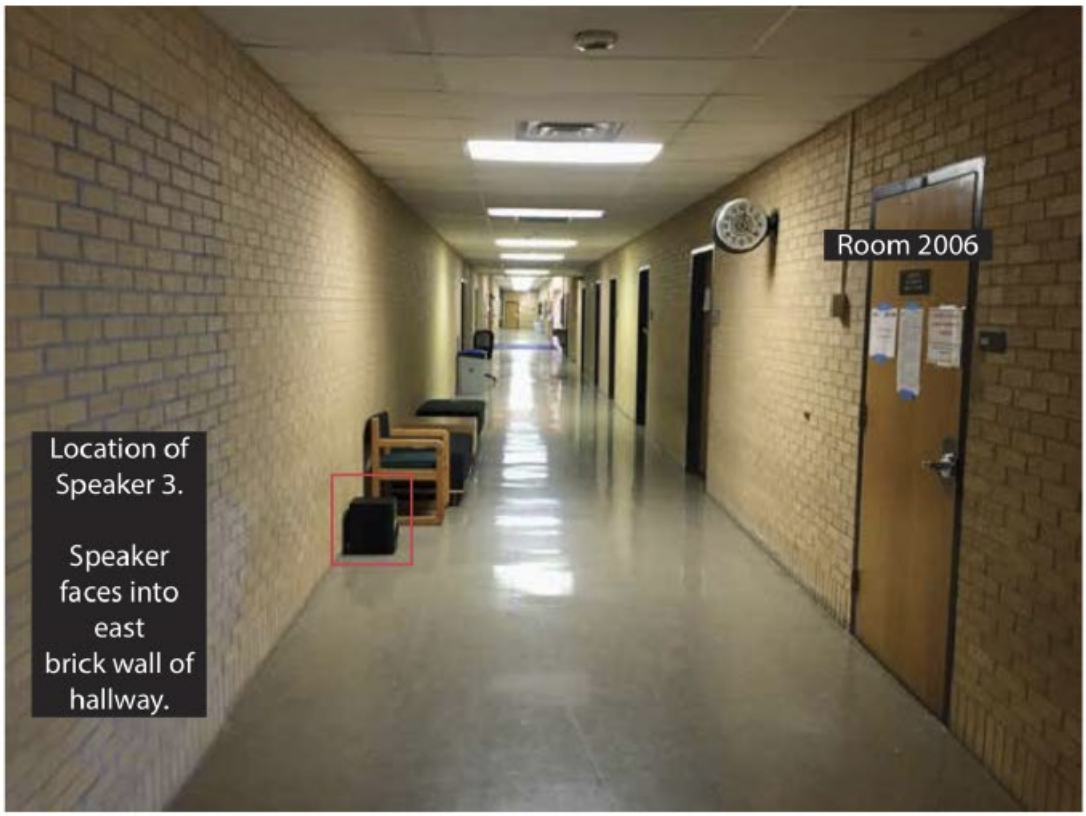
Grid warping may be needed here.

Speaker Locations: 1 and 2

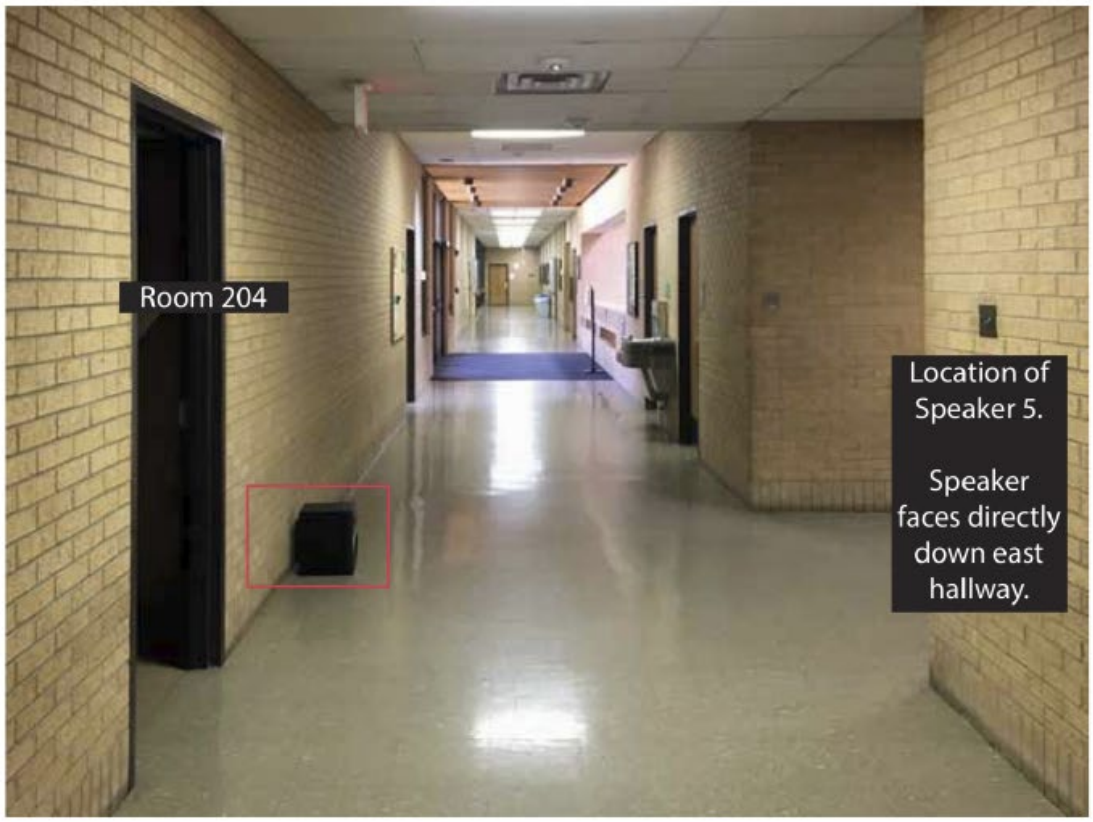




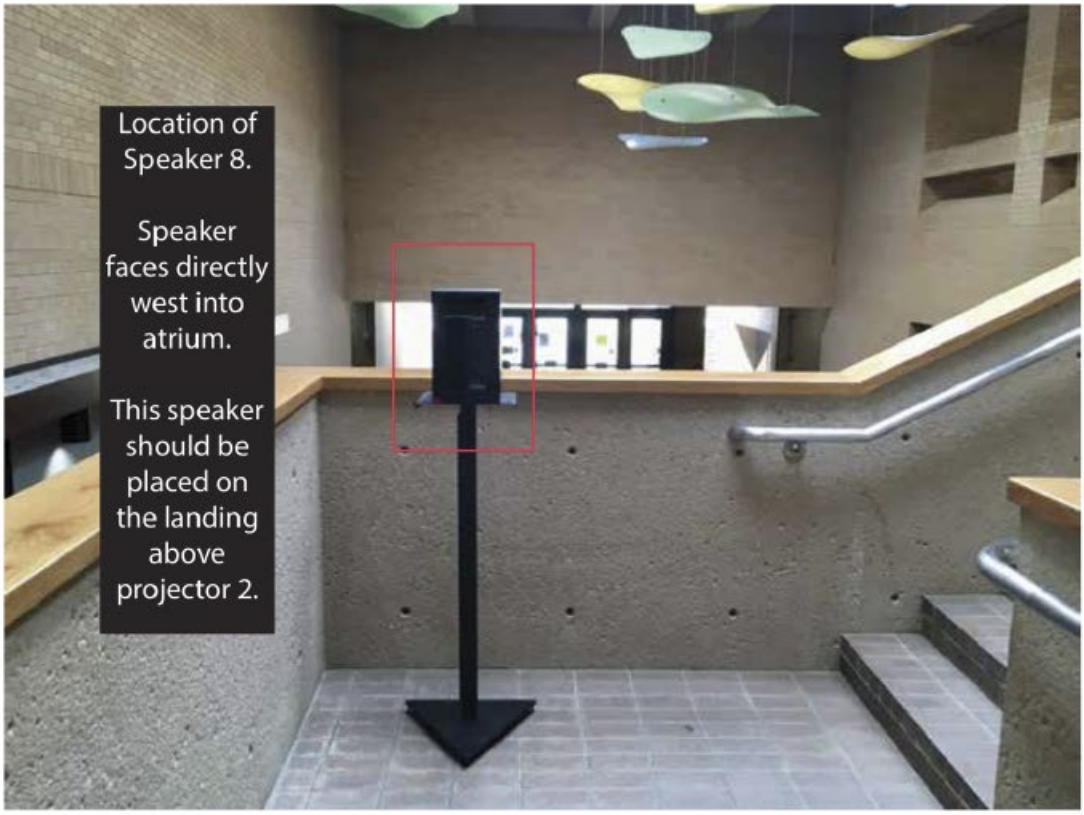
Speaker Locations: 3 and 4



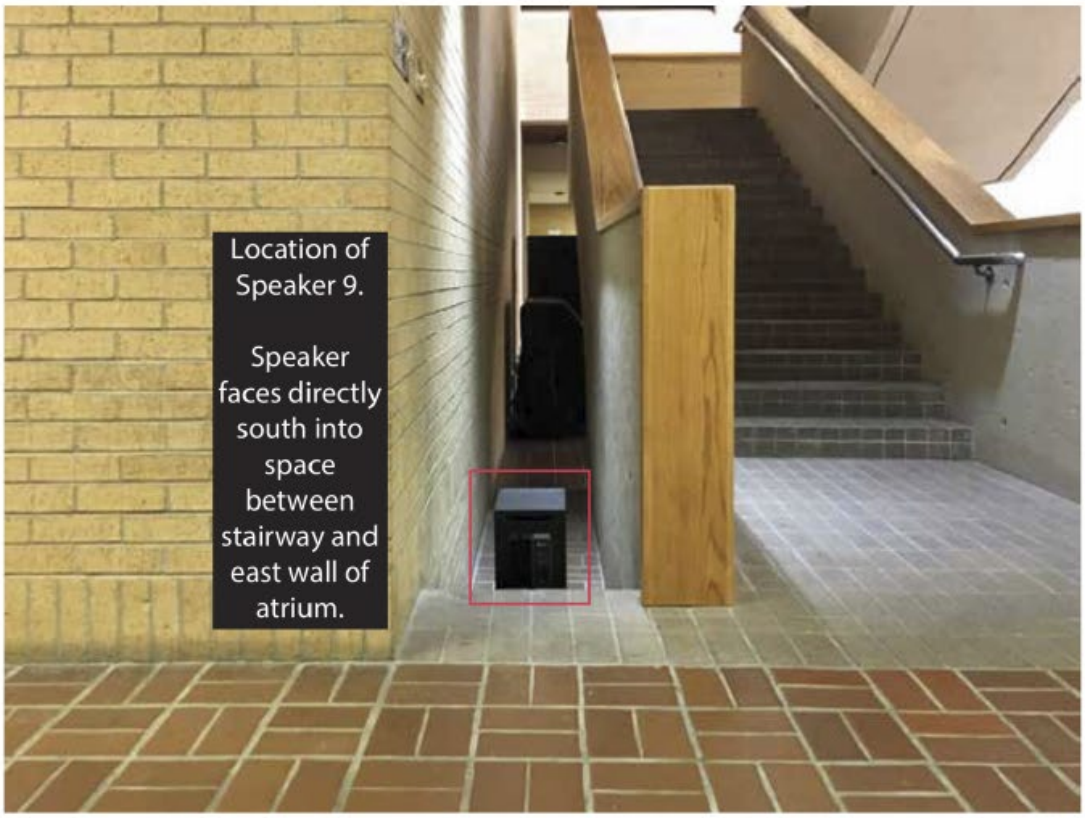
Speaker Locations: 5 and 6

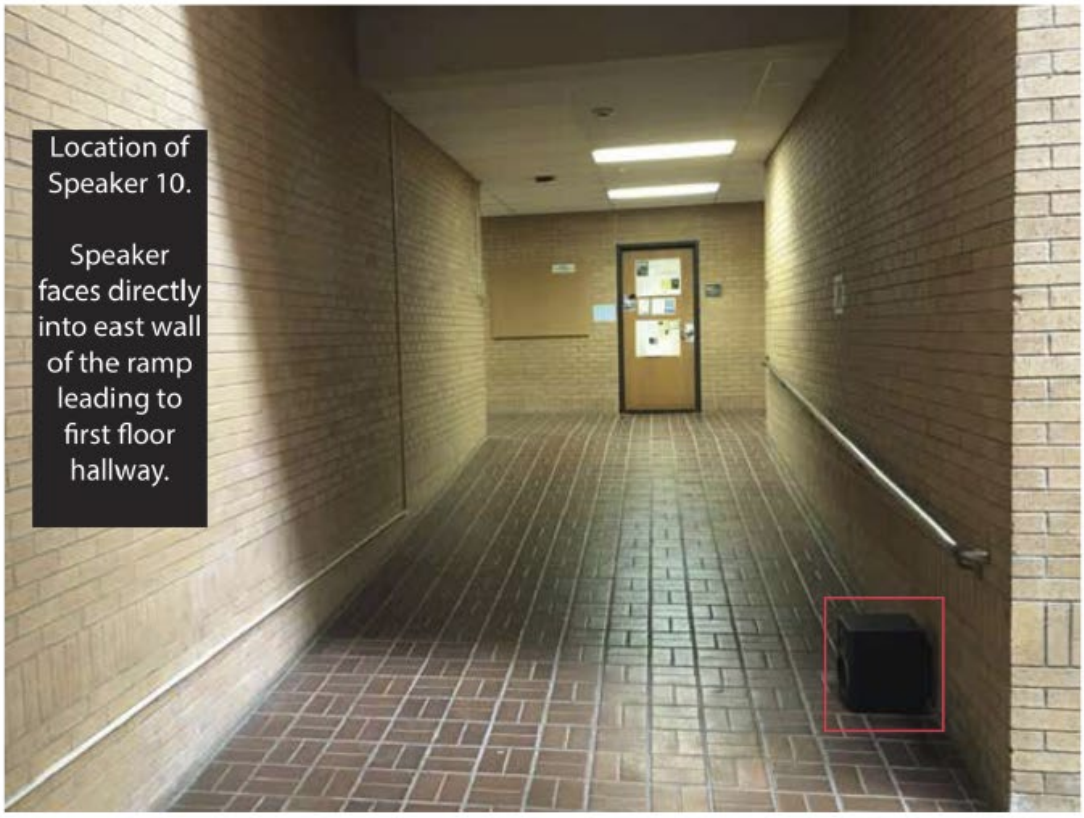


Speaker Locations: 7 and 8

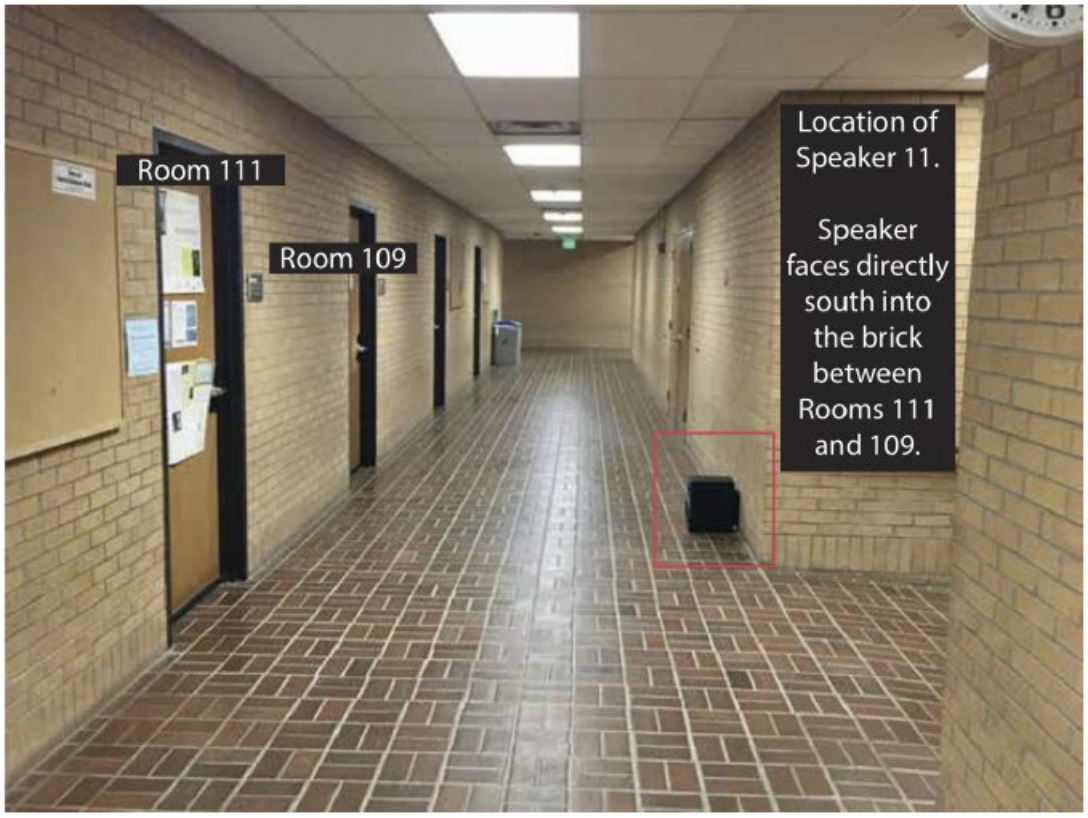


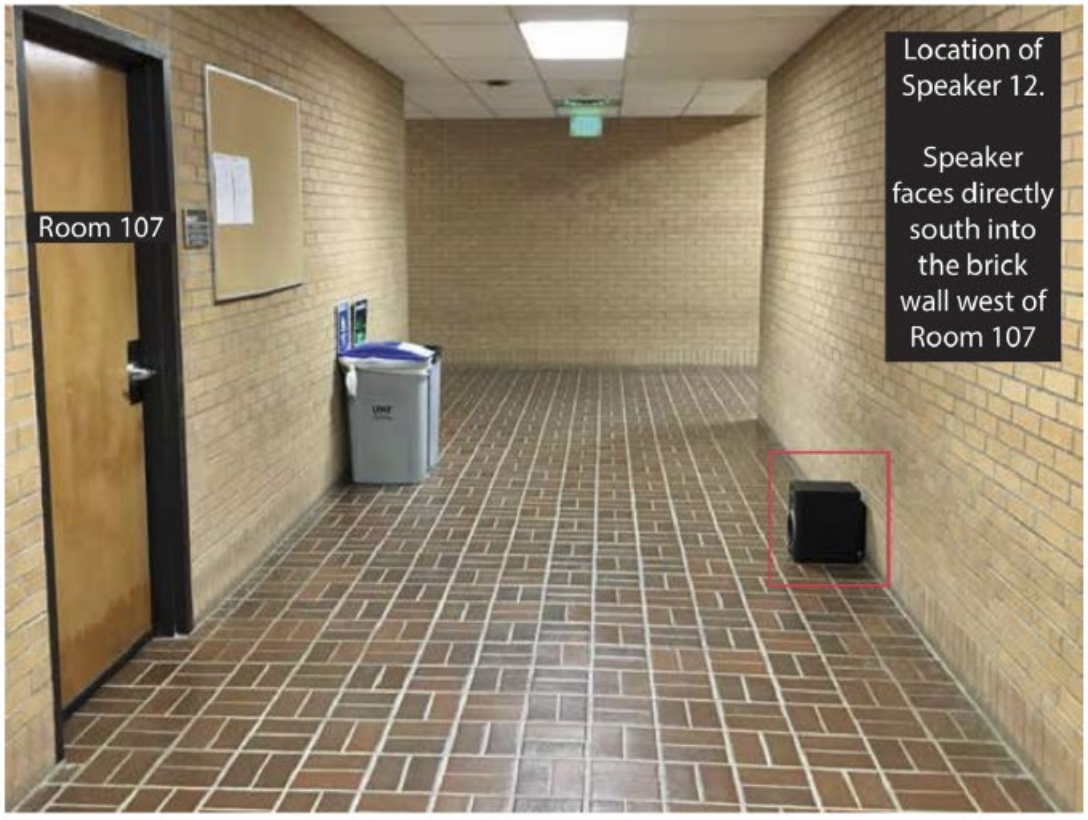
Speaker Locations: 9 and 10



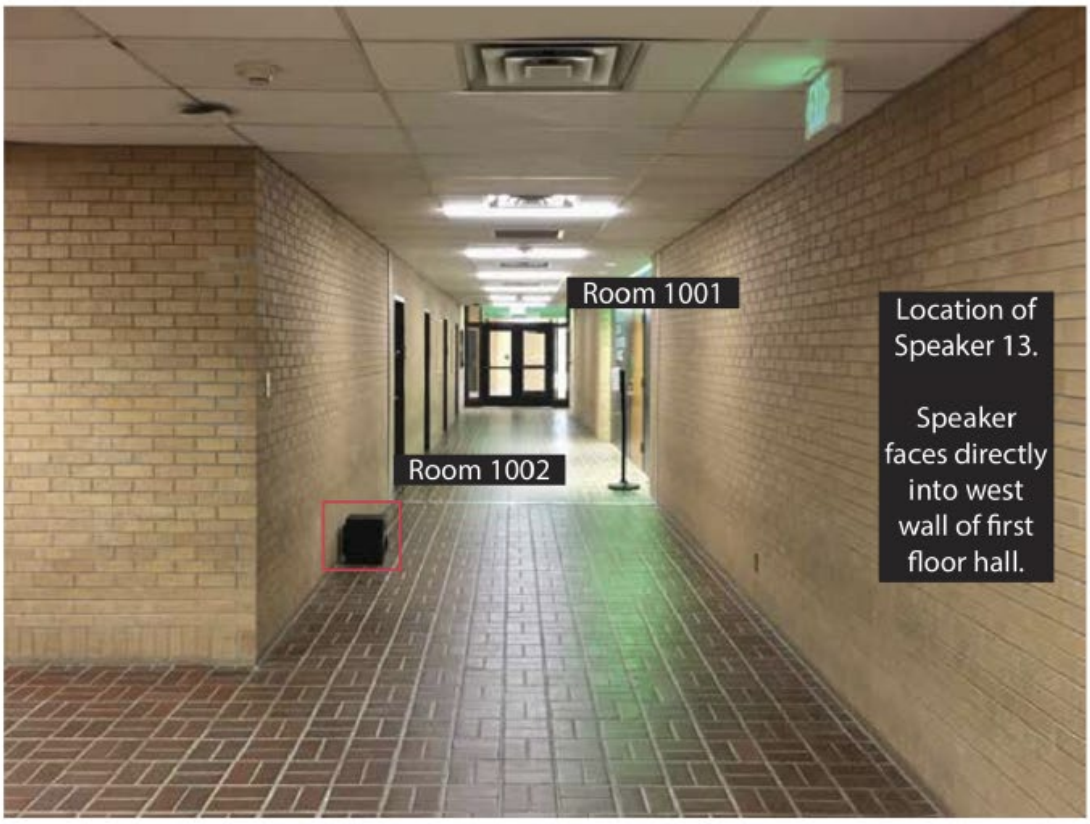


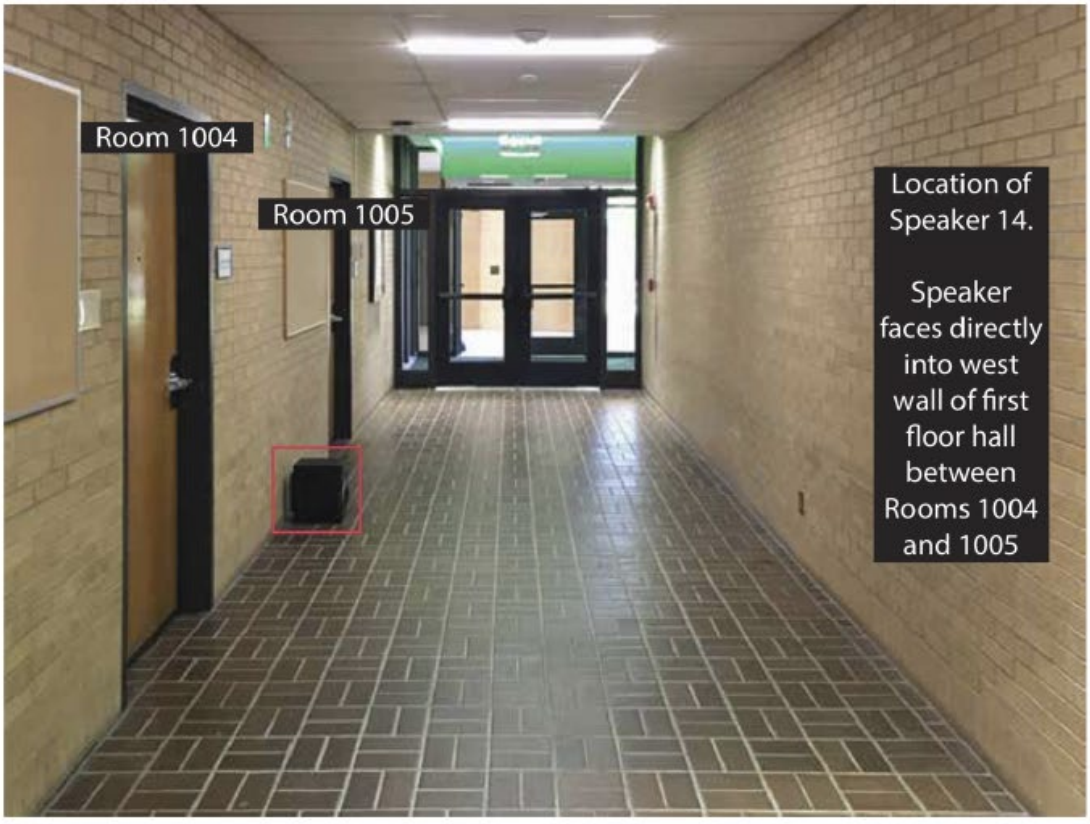
Speaker Locations: 11 and 12





Speaker Locations: 13 and 14





Speaker Locations: 15 and 16